

ARMOR



The Anonymous Battle (*A Troop, 1-11 ACR in War Zone C, South Vietnam*), See Pg. 18



Saddle Up... Tonight We Ride

"The sky is falling! The sky is falling!" I wonder how many times the death of the tank has been proclaimed? *ARMOR Magazine's* cover boldly declared the tank dead in 1972. The Jan-Feb cover, based on an article by LTC Warren Lennon, stated: "The tank today is as anachronistic as medieval body armor. Though it has many obvious advantages, it has evolved to the stage of imminent extinction because it has become increasingly inefficient in an age which demands more of machines than ever before."

To paraphrase Mark Twain, reports of the tank's demise have been greatly exaggerated. *ARMOR's* readers took Lennon to task. One letter writer pointed out that Lennon's argument that future tanks will look nothing like the mounts of today (1972) is correct, for today's tanks look nothing like the tanks of 1916. Lennon's article may have pointed more toward the evolution of the tank than its death. In the same article he adds, "There will continue to be a need for vehicles which can carry heavy firepower wherever it may be needed... There will still be a requirement for a fast cross-country vehicle to strike at the enemy."

Hmmm...sounds a lot like a tank.

The tank's demise has been announced once again; this time spurred by General Shinseki's announced plans for a medium-weight brigade. *Army Times'* headlines like "OFF TRACK? Armor Soldiers Question All-wheeled Future," (8 November 1999) have caused many to declare the tank dead again. But is this the case? What has the Army's Chief of Staff really said? Has General Shinseki given the Abrams main battle tank its last rites?

Quite simply, the answer is "No!" The Army Chief of Staff has asked the science and technology community to study different capabilities, such as electric drives, active protection systems, and enhanced armors, to determine what advances in these fields might mean for the future of mounted war-

fighting. This is far from revolutionary; in fact, the Marines are doing the same. Marine Corps materiel developers have launched a four-year project to study evolving technology to determine the merit of a revolutionary new combat system to replace the M1A1 and the Light Armored Vehicle by 2025 (*Armed Forces Journal International*, November 1999). The Marine Corps study includes: directed energy weapons, non-petroleum-based propulsion, advanced composites and more.

Returning to the question is the Abrams main battle tank dead, the answer is "No." Will it go on forever? Again, "No." General Shinseki admits that he does not know how long the M1 will be around, "whether it's 2025 or 2018, I don't have a good number..." Advances in technology and an ever-changing threat will drive the train and force weapon systems to evolve; it would be foolish and short-sighted to deny this fact.

The first issues of *The Cavalry Journal* discussed the relative merits of the saber and revolver as weapons for the mounted soldier. The journal also included tips, techniques, and procedures for taking care of horses. Mounted warfighting has come a long way. Armor and cavalry are more than branches and those who wear the brass must look forward rather than grow comfortable wedded to a particular system or way of doing business. We must be open to new ways and means to get about the business of mounted warfighting. As we enter a new year, new decade, new century, I invite you to the fray. Let's discuss the future of mounted warfighting. This is an exciting time that demands a professional dialogue as creative and as thought-provoking as that which took place among our predecessors. Topics such as the limited conversion division, the brigade cavalry troop, the future scout and cavalry system, the future combat system and the medium weight brigade should all spur discourse. We are standing by. "Over."

— D2

By Order of the Secretary of the Army:

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ARMOR

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LETTERS

A Defense of SAMS By the School's Director

Dear Sir:

In the last several editions of *ARMOR*, there has been some discussion about the School of Advanced Military Studies (SAMS). I want to present the facts about SAMS to you — the officers whom I hope someday will consider applying to the school. Soon, you will have to make informed decisions about pursuing your military education. Following are the facts about SAMS to help you make those decisions.

The founding vision of SAMS was to increase the military judgment and practical mastery of selected officers in combined arms warfare and all its ramifications. Over the 15 years of the school's existence, that vision has not changed. SAMS works to stimulate an officer's intellect so that he or she can overcome tough operational challenges in peace, crisis, and war. It stresses the development of how to think over what to think and has at its foundation the integrated, focused study of military history and military theory relating to the evolution of operational art.

Military history provides us the observed results of action — the factual accounting of decisions and the events that impacted them. In a complementary way, military theory attempts to order observed action and to establish cause-effect relationships — this happened because.... The military theorist applies his experience, logic, and reason to understand why events turned out the way they did, and why commanders made the decisions they made. In a like way, theory attempts to determine the impacts technologies have on the conduct of war. With the foundations of history and theory established, students move into the heart of SAMS — the exercise program.

The exercise program is SAMS' laboratory. Students apply theories to a broad range of complex, ambiguous operational and tactical problems. They analyze them and tear them apart to determine what did and didn't work in a given circumstance. During the process, they develop their own insights into the nature of operations and the relationships between military art and science. Similarly, they digest the military decision-making process piece by piece from the perspectives of both the commander and the staff officer. They begin to develop an understanding of battlespace visualization, of describing the visualization to direct action, of the necessary information requirements and personal relationships between the commander and his staff, and the absolute requisite of preparing complete yet understandable plans and orders for execution.

Do we study Clausewitz? You bet, and in great detail. Carl is in good company — we also dissect Jomini, Grant, Corbett, Mahan, Douhet, Fuller, Liddell-Hart, Mitchell, Svechin, Guderian, Mao, Senge, Warden, Naveh, and

others. Why? We do so because they had or have something to say about our understanding of operational art and our profession.

I frequently hear officers utter the phrase, "Our business isn't rocket science." They are only partially correct. Our profession isn't rocket science — it is infinitely more difficult! The complexities of today's operations environments and the faith the soldiers we lead have in our abilities to achieve victory at the enemy's expense, not theirs, demand that we not switch our brains into the checklist mode. We must out-think, out-act, and outmaneuver any bad guy on the block. We must be versatile, flexible, and adaptive. These attributes require a developed intellect and firm understanding of the profession of arms. SAMS helps develop both.

SAMS graduates depart Fort Leavenworth after two years of study to assume key battle staff positions in every one of our active duty divisions and corps. There, they are expected to assume battle staff training and leadership roles. These duties are no place to showcase individual talent. Actions of these formations in war and military operations other than war are integrated joint, multinational, and interagency team operations. Our commanders will not tolerate individual, go-it-alone efforts, period. Commander expectations served as one of several data points when I wrote my director's statement last year.

I encourage all of you to read my director's statement. It is on the web, accessible at www.cgsc.army.mil. My intent was for it to serve as an internal SAMS direction document. I wanted to remind all within the school that we cannot rest on our laurels. To remain relevant and responsive to the needs of the Army, we need to be critically introspective of the curriculum and our methods. We need to evaluate factors that may indicate change, including the implications of today's operations environments and the impacts that ever-increasing technological capabilities have on the conduct of full-spectrum operations. In the course of writing it, I had literally hundreds of conversations with commanders and staff officers in the field, students, alumni, and faculty members. I felt after these discussions that I could articulate the expectations that the field has of SAMS graduates. Read the expectations and understand what you will commit to if you elect to pursue a SAMS education.

SAMS is a continuous work in progress. It must remain in a dynamic state of introspective analysis and action if it is to remain attuned to the forces acting upon it and the Army. Within the school, the direction statement has had an effect. We —

- ✓ Conducted an exhaustive review of the curriculum and implemented several major changes.
- ✓ Integrated the study of history and theory and strengthened the exercise program.

- ✓ Are experimenting with the use of off-the-shelf simulation software to enhance several campaign-planning practical exercises and to enhance wargaming.
- ✓ Are establishing a senior mentorship program and developing several military colloquia sessions.
- ✓ Are developing the information architecture to enable outreach and reach back with the distributed body of SAMS alumni worldwide.

Selection to SAMS is an open and competitive process. This year, the school composition is 46 active duty Army officers, 4 USAF officers, 2 Marines, and 1 Canadian officer. This year, we also have our first Army National Guard officer. The requirements for application to SAMS are simple:

- ✓ Resident or nonresident C&GSC graduate, and volunteer
- ✓ Recommended by their chains of command
- ✓ Take an examination
- ✓ Interview with the SAMS Director.

After these are completed, the CGSC department directors vote applicants' files. We establish an order of merit list and fill the class. The selection process is fair and equitable. All applicants have a level playing field.

My office phone number is (913) 758-3313. Please call me if you want to know about the direction of SAMS, the dedication of its students and faculty, and its continued importance to the Army.

ROBIN P. SWAN
Colonel, Infantry
Director, School of Advanced
Military Studies

The Medium-Weight Force: Reinventing the Wheel?

Dear Sir:

Fully realizing the impact a medium force would have upon the United States Army, Marines, Reserve and Guard Forces would take volumes to discuss. The implications cross numerous lines of responsibility, including military contractors, their civilian employees, and ancillary service providers. While I understand that this issue has only been discussed within a "draft copy" basis by our Chief of Staff, it is a factor affecting the entire force and its supporting economy.

To the average soldier, the main battle tank is a force multiplier readily available within the forward line of battle. Close air support and indirect fires are allocated within the commander's operation order, thus they are not a direct asset to the average soldier. The tank is physically present during the battle, providing direct fire and maneuver to the soldier on the ground. It represents a tangible asset that plays a vital part in the success of the mission,

physically and psychologically. As maneuver elements, we have already lost one company per battalion — taking our MBTs and IFVs will only weaken the force.

The proponents for the medium force will expound the need to mobilize and deploy within a given timeframe to gain success on the modern battlefield. It does our troops no service to accomplish this action with supporting fires that limit the ability to destroy and maneuver against “third world” forces supplied with former Soviet Union heavy armor. Wheel vehicles will remain limited by the wheel — a technology as old as man himself. The trade-off of wheeled vehicles and track vehicles include weight, cost, maintenance, and rapid deployment. The most important factor is seemingly overlooked in the Chief of Staff’s proposal — the soldier’s life and fighting spirit.

Armor is vital to maintaining the edge in the new millennium battlefield. Technology opens new doors every day, including the enemy’s capability to produce lethal anti-armor weapons. Wheel vehicles offer little protection or confidence to the field soldier. Technology cannot build a better wheel, but it can provide a better alternative, many of which are discussed within these very pages. Tracks are an integral part of force structure and should remain the cornerstone until technology produces a true alternative.

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German Tank Expert Doubts Merkava’s Survey Rating

Dear Sir:

Thanks to *ARMOR*, we finally discover that for almost 10 years, Forecast International’s Weapons Group has assessed tanks and ranked them. (See pg. 13, July-August 1999 *ARMOR* -Ed.) But apparently, their work, ordered by so-far-unknown customers, was not published or made known. Anyway, I had never heard about such an endeavor and I have worked on international panels and groups since 1968 and was the Bundeswehr Tank Program Manager from 1981 to 30 September 1991. In that capacity, I was naturally very pleased to find Leopard 2 A5/A6 ranked in first place. So after reading the shortened version in *ARMOR*, I finally got to read the whole paper.

The authors rightfully state that such assessment is subject to personal doctrinal, nationalistic(?) and other factors and could be useful when compared to other (?) assessments by other knowledgeable(!) observers. Their ranking is a reasoned analysis, based on technical factors, user reports(?) and doctrines of the tank-developing nations. Their selection criteria limit the choice to tanks in production or ready for production. From there they chose 10, ranking from 1 to 10. I do not

want to go into too many details, but rather state a few observations...about “ranking” complex systems with a few criteria, somewhat randomly selected.

Until a few years ago, we basically had two kinds of tanks — NATO tanks for the defense of Central Europe and Soviet tanks for a possible attack of Central Europe. Modern NATO tanks are heavier and more sophisticated, with superior fire control, communication and control equipment, and especially all-weather optical-electronic sights. The requirements called for defense and counterattack under the climatic and terrain conditions of Europe.

The Red Army had different requirements — tanks to attack NATO defense lines, gain terrain, and play havoc with NATO’s logistics.

If you would assess and rate tanks — which one is No. 1 and which No. 2? This shows clearly that you can rate tanks on singular properties without many problems like weight, size, gun caliber, rate of fire, power-to-weight ratio, but that of course is in no way to be interpreted as a measure of a tank’s overall performance.

A tank is developed according to the requirements of a specific user. If one wants to assess a tank’s abilities or properties, it has to be done against these requirements. If several parties with differing requirements should undertake to assess the same tanks against those requirements, then it is quite logical that the outcome and a “ranking” could show different tanks to be No. 1. Only when the assessment of several tanks against the same requirement shows ranking numbers, then it is to be assumed that for said requirement the ranking is correct. In this sense, I am pleased to state that the armies of the Netherlands, Switzerland, and Sweden assessed Leopard 2, M1A1/A2, Leclerc, Challenger 2, and T80U (Sweden assessed all tanks, the Netherlands and Switzerland only the first two) against their national requirements. In all cases, Leopard 2 came out No. 1, M1A1/A2 No. 2. Do not get me wrong; all tanks are formidable fighting machines and if one could not have one, one of the others would very probably fulfill almost all requirements as well... Again, do not get me wrong, Leopard 2 is the tank of our choice, and with very good reason. The other armies had probably very similar requirements, therefore, Leopard 2 came out as tank of their choice as well. And let us not forget — offset is a very serious factor in any contest.

In short, I do not think that a ranking or assessment of those factors, as stated by Forecast International Weapons Group, is a method by which one can choose a tank. It has to be done against a set of requirements.

Particularly short-changed in this ranking assessment is Merkava. Talik, as MG (Ret.) Israel Tal is commonly known, has done a great job in developing and enhancing Merkava I, II and III, and his work on Merkava IV will undoubtedly produce a very modern tank that will meet the requirements of most tank users.

So, why did they rank Merkava as No. 10, way behind the Japanese Type 90 (rated No. 3), about which very little can be substantiated through facts, the Challenger 2 with Challenger 1 chassis and a rifled 120mm gun (the ammo is not interchangeable within NATO, or Merkava, or the Japanese Type 90 smooth-bore 120mm gun). The T80UM is ranked No. 6, followed by Korean type 88/120, which beat the Russian T-90 out as No. 7 and the T-90 to be followed by a grotesquely outperformed T-72 in Desert Storm. All these tanks are ranked before Merkava Mk III, that no user other than the Israeli Defence Force has so far tested, but that has seen battle on numerous occasions and fared very, very well then.

The raters state that Merkava III is a formidable tank, the protection level among the best in the world due to unique design and advanced modular armor, “fairly advanced level of vehicle electronics and fire control” (?), to include a threat warning system. Does all that justify a No. 10 rating — certainly not! I almost forgot to mention that they also found several features in Merkava III that are “entirely unique!”

They then state that by “Western European standards” (whose?), the Merkava is deficient in terms of battlefield mobility because of the anemic power-to-weight ratio, much lower than acceptable by most other leading tank-developing nations.

But then they state that this tank reflects the unique requirements and doctrine of Israel and that this tank represents the best balance of a tank: to move, communicate, and shoot for the Israeli Defence Force. So, they downgrade the tank for an “anemic power-to-weight ratio,” which they equate with “deficient battlefield mobility.” The raters obviously never were in Israel, the desert of the Negev (Sinai), the mountains and hills of the Golan and Galilee, to look at the terrain and the requirements of this terrain to the running gears of tanks. I have seen quite a few demos in those areas and had the opportunity to drive and shoot the tank myself. The overall terrain performance of Merkava is very, very good; sure, a few more horsepower would do the tank good — or even better, but I have some doubts whether some of our more sophisticated and better-powered tanks would keep up with Merkava III in said terrain. Keep in mind: our tanks were developed according to *our* requirements — and we have no desert or Golan Heights in Central Europe!

In summary: the raters themselves gave Merkava III credit for some, but not all, of the unique features that Talik had installed. Basing a rating on a low power-to-weight ratio without considering the terrain performance does not make sense. Merkava III is a very good, modern tank and, as stated by the raters, the tank of choice that meets the requirements of IDF best. According to their own specified rating criteria, it should get a much better rating number!

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COMMANDER'S HATCH

Manuscript's Tone Raised Editing Questions

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



Over the last month there has been a lot of traffic regarding decisions to edit "Move It On Over," published in the last *ARMOR* Magazine. Let me set the record straight: The decision to edit the article, submitted by retired Army Brigadier General John Kirk, was mine.

The intent of *ARMOR* Magazine is to produce a professional publication that is sufficiently provocative to engender debate and discussion on contemporary issues facing the Armor force. Within this context, our editor is authorized and empowered to edit all articles for publication. As you would expect, authors agree to this up front. Almost always, editing consists of fairly docile grammatical and structural fixes.

In the case of "Move It On Over," I reviewed the content after becoming aware of concerns regarding the literary style of the author. On examination, I took editorial issue with the tone of the manuscript. To his credit, BG Kirk raised some very important points and challenged traditional thinking for revising *FM 100-5*. His scathing methods and personalized attacks, however, struck me as clearly out of bounds for a professional journal.

Following an additional edit by the magazine's staff at my direction and in my role as publisher, I added some further editorial corrections prior to publication.

I just want you to know, right or wrong, the decision to edit this article was mine and mine alone. I judged that BG Kirk's draft submission was inappropriate within a professional journal published at taxpayer expense. It was my call to make, and I made it without hesitation or reservation. I believe the integrity of *ARMOR* Magazine has been preserved. That's my view from the commander's hatch. Let me know what you think.

These are exciting times for the Army and our Armored and Cavalry Force. It is certainly a time of intense, focused effort at Fort Knox. Right now we are focusing on our responsibilities for forming, training, and fielding the Army's first "medium weight" force, known now as the "Initial Brigade," which will be fielded at Fort Lewis, Washington. TRADOC is providing the leadership for the brigade's ongoing development while the U.S. Army Infantry Center has overall proponentcy. The brigade is an "infantry-centric" organization with a basic composition of three infantry battalions and a Reconnaissance, Surveillance, and Target Acquisition (RSTA) Squadron; however, it is at its core a combined arms organization. Its units will include several for which the Armor Center has direct responsibility for developing. The brigade's Reconnaissance Surveillance and Target Acquisition Squadron, the battalion scout platoons, and the battalion's medium gun system platoons are these organizations.

Specifically, the Armor Center is the proponent for the following Initial Brigade areas: (1) Conducting a performance demonstration at Ft. Knox of Initial Brigade vehicle/platform candidates for business, industry, and international suppliers; (2) Developing the O&O, doctrine, and DTLOMS requirements for the Reconnaissance, Surveillance and Target Acquisition Squadron; (3) Overseeing the development and fielding of the mobile gun system platoons within the infantry battalions; (4) Overseeing the development and fielding of reconnaissance platforms in both the RSTA squadron and the scout platoons within each of the infantry battalions and; (5) Leading the C4ISR development for brigade and below organizations.

Before addressing each of these efforts, I'd like to dispel some anxiety that has

surfaced in the Armor community regarding this effort. The first concern is that armored forces and the Abrams main battle tank are in danger of imminent demise. Absolutely untrue. Let's look at our recent past in an effort to put all this in the right context. As many of you know from service in the Cold War, we built a suite of platforms that dominated the Soviet threat to Western Europe. Each platform had at its core a requirement for battlefield effectiveness encompassing lethality and survivability. Because we were able to prepare the battlefield for almost fifty years, many battlefield mobility concerns were solved through engineering efforts. We dramatically reinforced all the bridges so we could cross MI tank formations, we improved the road infrastructure to give us the agility we needed, and we prepared battle positions in depth. We stockpiled enormous amounts of supplies and repair parts. Last, we pre-positioned or forward-deployed equipment on the battlefield to field ten divisions in ten days. Today, however, as we try to deploy formations employing the big five to immature operational theaters, we find that the deployability, mobility, and sustainability characteristics required for decisive strategic and operational maneuver are not resident in our force. Desert Shield (six months to deploy the force), Somalia, Bosnia, Albania, and Kosovo all instruct us that our superb (and winning!) Cold War capability designed for operations on an extensively prepared battlefield does not provide us the requisite capability for the small scale contingencies that confront us in the post-Cold War environment.

However, we cannot and we will not turn away from the dominant characteristics provided by the Abrams/Bradley fleet. As I stated in my first column as Chief of

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Reclassification Preserves The Vitality of MOS 19D and 19K

by CSM David L. Lady, Command Sergeant Major, U.S. Army Armor Center

As you have all just read this issue's "Commander's Hatch" (if you have not, go back and read it now, beginning with paragraph six), you know MG Bell's view of the continuing vitality and usefulness of the heavy armored force. Until significant technological breakthroughs enable the fielding of the Future Combat System (FCS), the M1-series of tanks will remain absolutely necessary as the Army dominates high-, mid-, and low-intensity conflict.

The medium-weight force is not designed to replace the heavy force. In fact, the draft operational and organizational requirements (O&O) for the initial brigade states that it must have augmentation to operate successfully against armored and mechanized forces. Such augmentation would come from heavy armor. Our Army has not departed from the doctrine that major theater wars will be fought and won by the heavy force. In this fiscal year alone, nearly \$850 million will be spent to continue the development and fielding of the M1A2 and M1A2 SEP tanks. The fielding plan for equipping all armor battalions and heavy armored cavalry squadrons with the M1A2 SEP or the M1A1D by 2009 remains in place.

Two factors seem to be contributing to the perception that the Army, and the Armor Center, is turning away from heavy armor units as the centerpiece of the armored force: The first was the publicity accompanying the creation of the first medium weight brigade; and the second, the ongoing restructuring of the heavy divisions which reduce 19K authorizations throughout the operational force while increasing 19D authorizations.

Many tankers are very concerned about the opportunities for professional service and development as the Army changes. Many see the reclassification of MOS 19K soldiers to MOS 19D as evidence that 19K is fading away.

That is not the case. In fact, reclassification is a tool which will be used to keep both MOSs vital, to meet operational needs without allowing promotion and assignment opportunities in either MOS to stagnate.

By June 00, 12 heavy brigades will have begun or completed limited conversion to the Division XXI design. Each will have lost one armor company per battalion; each will have organized the brigade cavalry troop; most will still have ten-vehicle scout platoons in each armor or mechanized battalion.

These changes will cause 19D authorizations to grow by over 400 in this FY alone. Most of those authorizations are for junior NCOs. The current population of Specialists cannot support the internal growth of these NCOs. 19K authorizations are decreasing this FY by 638 authorizations. The 19K Specialist population will be at 124% of authorized strength, overstrength by 614 soldiers.

The Armor Center and PERSCOM cannot allow this imbalance to stand. The new cavalry organizations will fail for want of soldiers and MOS 19K will see a sharp slowdown in promotions that will drive skilled crewmen out of the Army.

For nearly five months, PERSCOM and the Armor Center have advertised for soldiers to volunteer for reclassification from 19K to 19D. Results have been

poor. In-service training seats (in the 19D OSUT battalion) are limited to a few each class. Reclassified soldiers join their training cycle at week nine, after the cycle has gone through basic combat training. In order to fill the cavalry units by June 00, involuntary reclassification of 19Ks will begin 5 December 1999.

Without additional reclassification volunteers, 195 soldiers will receive involuntary reclassification orders in order to meet the goal for this FY. The number will drop as more soldiers volunteer for reclassification. PERSCOM will use TDY and return for most of the soldiers being reclassified as long as valid requirements exist on their installation for 19D. Armor branch at PERSCOM has created an order of merit list, identifying good 19K SPCs who are candidates for promotion but whose opportunity will come slowly if the imbalance in 19K is allowed to remain.

I ask my fellow noncommissioned officers to continue to encourage their soldiers to reclassify voluntarily. There is risk to involuntary reclassification; it is *not* what MG Bell and I would prefer to do. However, the operational requirements will be filled and the needs of the Army will be met. In future articles, the CG and I will detail the implications for both MOSs as the first two brigades are converted to medium-weight units; this too will cause a need for reclassifications.

Sergeants, we can set the force and our soldiers up for success. Or, we can allow PERSCOM managers to try. Assessing, counseling, and coaching are not the core tasks of bureaucrats. Those are our tasks.

"SERGEANTS, TAKE THE LEAD"

Armor Takes Flight

Abrams Tanks and Bradleys Catch a Hop Into Kosovo

by Captain Marshall Miles

This article describes the experiences of Co. C, (the Flying Coyotes) during their operations in Kosovo. The author shares his feelings and insights as he takes his company, on very short notice of less than 48 hours, from its base camp in Albania. The unit loads its tanks on aircraft and flies into Macedonia, then road marches into war-torn and bombed Kosovo. — Ed.

On 13 June 1999, Co C, 1st of the 35th Armored Regiment, 1st Armored Division, the “Flying Coyotes,” entered the Kosovo region of Yugoslavia. The Coyotes were the first tank company in theater, and represented the entire heavy armor element of the 2-505th ABN BN, 82nd Airborne Division. When we received orders to march into Yugoslavia, C66 led the march north and was the first American vehicle into Kosovo. The overall task force consisted of one mechanized infantry company — Co D, 1st Bn, 6th Infantry from our brigade in 1AD — and three light infantry companies from 2-505th.

Three light airborne companies with one tank company and one mechanized infantry company made for a very unique, yet potent force. It was a part of the overall American contribution to the Kosovo effort, which also included the 24th Marine Expeditionary Unit (MEU). They followed the Army contingent by 24 hours into Kosovo. The 2-505 basically occupied the south and west part of the American sector and the 24th MEU occupied the east and north.

Albania, and later Kosovo, posed many challenges for a tank company operating independently from its parent battalion. We received superb support from the infantry battalions to which we were attached, but we still had difficulty with two major issues: parts and people. One of our main problems was maintaining our tanks in a very austere environment with a very difficult logistics trail back to our home station in Baumholder. Our second major issue was dealing with the UCK (KLA) rebels who were trying to

establish themselves as the main force in the region.

Given these two major themes, this article will attempt to give commanders some tips on how to operate in theaters similar to Kosovo. This article will be broken down into the following topics:

- Conducting a change of command while deployed
- Deploying tanks by air
- C/1-35 AR’s road march into Kosovo
- Establishment of AA Bondsteel
- Force protection
- Mounted patrol in Kosovo
- Winning the hearts and minds
- Family support groups

Conducting a Change Of Command While Deployed

Before entering Kosovo, C/1-35 AR was deployed to Rinas Airfield, Albania, where we were part of the force protection package for Task Force Eagle. The primary mission was to guard the airfield, protecting the AH-64s that were stationed there during our air war against Serbia. At this time, C/1-35 was cross-attached to the Regulars of TF 1-6 IN.

I deployed to Albania on 21 May 1999, and was scheduled to take command of the company on 2 June. By the time I arrived, the Coyotes had already been in Albania for about 30 days. Morale was an issue, due to the hostile climate and the stationary nature of the mission. Tankers are, as a rule, creatures that yearn to *maneuver*. Keeping them tied to a muddy airfield to guard Apaches was not an enjoyable mission. The soldiers guarded the airfield from watchtowers along the eastern perimeter. Because of the hopelessly muddy soil conditions, the tanks were not



An M1 from C Co, 1-35 AR, is seen chained down to the deck of a C-17 as the unit prepares to fly from Albania to Macedonia, enroute to Kosovo. —Author Photo

permitted to move without higher authorization. Those that were not parked as stationary posts on the perimeter were parked in a very crusty “motor pool” that resembled the surface of the moon.

The most difficult part of conducting the change of command inventory in that environment was finding time for the soldiers to lay out their equipment. Thus, I had to work around the guard schedule and inventory equipment tank by tank. The outgoing commander did a great job trying to get me extra time to inventory the equipment, but was very constricted by his everyday mission. In spite of this difficulty, we managed to inventory roughly three tanks per day. The actual inventory on site was not very difficult, but we also needed to reconcile hand receipts for equipment left behind in Baumholder. This equipment included computers, various tools, and other miscellaneous items that the Coyotes did not bring to Albania. Fortunately, I had an excellent supply sergeant, SGT Thomas Langone, who came to the company about two weeks prior to the company’s deployment, replacing a non-deployable soldier. SGT Langone was an extremely meticulous NCO who would not allow me to sign for anything that was not properly inventoried or reconciled prior to his deployment.

Deploying Tanks By Air

Prior to the change of command, events in Albania had been moving at a fairly steady pace. We had been rapidly building a base camp that could be used for defense or as a staging base for future operations. The change of command took place on 2 June 1999. The ceremony was

a quick one, and following that, events took a rather rapid turn. That evening, at an emergency command and staff meeting, the 1-6 IN commander, LTC Embrey, gave us the warning order to be prepared to deploy by air to Camp Able Sentry, Macedonia, in 36 hours!

This warning order, however, did not relieve us of our responsibility for manning posts on the perimeter. Being the only tank company was a daunting task: we had to prepare the company to deploy by air while still accomplishing the current mission. We basically had to use sleep time to prep the vehicles. The men were on an eight-hour guard shift rotation, so we used their downtime to prepare the vehicles. The result was that the men got very little precious sleep.

This was when we discovered, again, that being a part of a large operation leads to a great deal of frustration. The order to “go” changed hourly. Since we were literally the “tip of the spear,” the order to deploy the company was being directed at the top of the national level. Thus, one hour we would be told “go,” and four hours later we were told “stay.” At least twice, we conducted a complete relief in place of our sentry positions, pulled off the perimeter, only to be sent to the perimeter again.

We finally received the word, and on 7 June, we pulled off the perimeter for good. All of our tanks went through an all-night, makeshift pre-deployment processing center (DPC). The tanks were given a pre-Joint Inspection (pre-JI), weighed, and balanced at the DPC station.

Several tanks broke down because they had not moved in over a month. Our mechanics worked long and hard to get them repaired in time to deploy. We tore down the tents that we had been living in and slept outside on our vehicles. Fortunately, during this entire time, our tanks were fully uploaded with ammunition. Not having to draw ammunition during this stressful time period saved us an enormous headache.

After the DPC stations had been completed, we were told to “stand down” — we were not going anywhere. Instead of re-erecting our tents, we received permission to remain sleeping on our tanks until further notice. This also had the effect of preventing us from moving back to the perimeter. This was a wise decision, because on the morning of the 9th, we were again given the word to “go.” Again, we went through the DPC and the pre-JI process. We then lined our tanks up at the

airfield and waited for the Air Force C-17s to arrive.

The C-17 is a wonderful aircraft. They are exceptionally easy to load and unload, once you have completed the Joint Inspection and have enough plywood. However, the exact requirements for loading the M1A1s had never been worked out between the Air Force and the Army. While we were lined up at the airfield, there was a lot of confusion as to what the *exact* requirements were to load tanks on the C-17s. We spent a great amount of time determining whether shackles were required for loading. Basically, they are not — the C-17 is a self-contained loading vehicle — they carry everything you might need to load and tie down the vehicle, except the plywood, which protects the deck of the airplane.

Giving the word to “go,” then “stop,” then “go, go now” was extremely frustrating for the soldiers. Morale boosters, such as making the troops stencil a symbol of a flying tank on the left side of their turret and authorizing them to name their tanks and stencil the names of their tanks on the right side of the turret were effective. The rule was that they would receive one set of wings for each flight and that when we got to Macedonia, we would paint on a second row of wings. Names such as “Lina’s Revenge” (my tank), “Checkmate,” and “Bounty Hunter II” greatly increased morale and gave the soldiers a sense of ownership and pride, and linked us to the tank heritage of the past. My outstanding first sergeant, Steve Lamb, also greatly boosted morale by ensuring the very last thing torn down from our tent quarters was the phone — the soldiers’ only link to their families back in Germany and the United States. Morale was very, very high by the time we began actually loading our tanks on the planes.

Road March into Kosovo

The flight from Albania to Macedonia took approximately 30 minutes. I was greeted by American and French transportation officers who guided us from the airfield at Camp Able Sentry (CAS) to the vehicle holding area. I also met the head PAO, CPT Marty Downie. I attempted to build some kind of rapport with him because I knew that this would be a historic event. Fortunately, our arrival had been planned for several days. MAJ O’Neal, the transportation OIC, had even pre-measured and painted marks on the ground showing exactly where each tank was to be staged. As each tank flew in, I ensured that each tank crew was

greeted by an officer or NCO in the company who guided the men to the living area. Just *being* out of Albania, combined with the outstanding mess hall at CAS, was a tremendous boost to morale.

We were now cross-attached to 2-505th Airborne, under the command of LTC Anderson. That night, we had our first staff meeting. We were told that we would follow on behind British forces in five days. Intelligence was very limited at that time. We were still not sure if and to what extent the VJ (Vojnska Jugoslavia - Yugoslav National Army) would comply with the terms of the peace treaty. Thus, we planned for the worst. The S2 perceived our biggest threat would be from snipers and mines. The S2 also told us to expect a number of VJ soldiers to stay behind in Kosovo dressed in UCK (KLA) uniforms. Lastly, the S2 recommended to us that we stay road-bound until the engineers declared our operating areas mine-free.

At approximately 2000 on the night of 11 June, LTC Anderson asked me if I could be prepared to make the drive into Kosovo by *midnight* of that night! This was a direct response to the surprise entry of Russian forces into Kosovo. This created an immediate need for NATO forces. I informed him that I could move by 0600 the next morning if we worked through the night.

There was a reason for the delay. The M88, the medic and maintenance M113s, and my first sergeant had not arrived yet. In addition, we did not have any communication support. Finally, planning at that point was very haphazard. Our task and purpose remained unclear.

That night, after quickly briefing my PLs and PSGs, I got my men out of the tents and we slept on our tanks in preparation for the possible road march, but the road march never happened on that day. The next morning, on 12 June, LTC Anderson informed us that we would not go that morning, but we would SP at 0800 the next morning. This was a great relief because it would give time for my 1SG to arrive with the last of our soldiers. It also gave the staff at 2-505 more time to plan for the mission.

That night, we received our mission. Basically, C/1-35 would be the advance guard for the charge into Kosovo. As we marched overland, A/2-505 would fly in by CH-47s and UH-60s. We would link up with A Company at the proposed AA, known as AA Bondsteel. On our maps, Bondsteel was drawn in as a 3km x 3km “goose-egg” east of the city of Urosevac.



An M1 moves up the road near Camp Bondsteel, Kosovo.

Photo: SFC Garry H. Bleeker

We would be following close on the heels of a British Gurkha Regiment. I put out my OPORD at about 2200, but not many men got sleep that night. We were too busy sewing flags on our uniforms. This was a last minute change that came down prior to the LD, but one that had many unintended consequences. We were not *allowed* to wear our flags in Albania but it was a *requirement*, by the terms of the Peace Treaty, while in Kosovo. This requirement cost the company precious hours of sleep.

The morning of the 13th, stand-to and PCIs were at 0500. I gave the men a *very* detailed safety briefing to include all ROE that I had been given the previous night. I explained to them the seriousness of the mission and told them that British troops had received sniper fire the previous day and that the Germans had come under mortar fire. We left right on time at 0800. The order of march was my tank, followed by 3rd Platoon, 2/1-6 IN (cross-attached from D/1-6 IN), 1st Platoon, the ISG with the company trains, and the XO's tank brought up the rear.

Our first destination was Skopje, Macedonia. I set the road march speed at 30 KPH, but we had to adjust it going through the city. People lined the streets of Skopje. A few threw flowers and a few threw rocks, but most people just stood in awe. The first problem occurred when a roll of concertina fell off of C13 and got tangled in the fuel and brake line of the PLL 5-ton truck. It cut the fuel and brake line very badly and it had to stop. C65 and the XO, 1LT Mike Mitchell, stopped to provide security. We paused for 15-20 minutes while the mechanics fixed the

damage to the truck. It couldn't be repaired quickly, so the company drove on. The tool-truck and some mechanics stayed behind to assist in repairing the truck's lines. Soon afterward, C14 broke down as well. But the company moved on.

On our way north, we passed by a huge refugee camp near Orman, Macedonia [EM300578]. We stopped to refuel just south of the Macedonian/Serbian border (south of the Serbian town of Djeneral Jankovic.) That's when we first came under attack — not by Serbs but by the media. CNN was the first to approach us. They wanted to put a camera crew on my tank to film our entry into Serbia! I was very reluctant, but agreed to do so. So, as we crossed the border (after a 30-60 minute halt to refuel), CNN was on my tank filming the whole event. Although we understood the need to support the media, they were a major distraction from our ability to focus on the mission. We were on a national-level mission to liberate Kosovo, yet the media was treating the whole affair like some kind of victory parade. It was very hard to stay focused.

From Djeneral Jankovic to Kacanik (a distance of 10km), there were a series of very long bridges and three tunnels that we had to pass over and through. I dropped off the CNN crew at the base of the first bridge. There, a British Gurkha Regiment held us up for 30 minutes. They were uploading on CH-47s to continue the march north. When crossing the bridges and going through the tunnels, I would cross over or go through first and provide far-side security. Then we would bound, usually a section at a time, to the

far side. Piece by piece, bit by bit, we got through the Lepavac Valley to Kacanik. At one of the bridges, we picked up a camera crew from NBC. I did not consider them nearly as professional as the CNN crew, but tried to both stay focused on my mission and handle the media with extreme care. The NBC crew dismounted at Kacanik.

After Kacanik, the road march picked up speed. Our next stop was S-E of Urosevac, vicinity EM 890156. I picked that location because it was relatively far away from any towns where I believed snipers might be positioned. [I was also concerned about mines, but, fortunately, the British marked the known mine locations along the highway *very, very* well.] At that spot, I sent out my quartering party. Since LT Mitchell (XO) was still far back in the rear taking care of C14 and the PLL truck, I decided to lead the quartering party myself. It was now about 1800, and I was concerned we wouldn't get the AA set up before sundown. The quartering party, therefore, consisted of C66, C12 (the plow tank), D23 (a Bradley), and C33 (both NBC vehicles.)

Establishment of AA Bondsteel

When we got to Kacanik, A/2-505 flew in overhead to the proposed AA site on CH-47s and UH-60s. I linked up with the A Company commander on the road north of the proposed AA site. Neither the A Company CO nor I knew the best place to put the AA. We had been given the Bondsteel "goose-egg" on our graphics, but nothing more than that. We were very concerned about mines. After doing some map recon, we chose a spot at the junction of two dirt roads. We decided to form a triangular shaped AA, because it would be the easiest to defend and the easiest for me to plow (thus, quickest to put in.) It was also on some relatively decent high ground.

My first major challenge for setting up the AA was dealing with the media. An NBC camera crew had inadvertently set up a *roadblock* at the entrance to the AA. "We can't move now... we just set up a satellite link-up with London and we go live in 5 minutes," NBC replied. Needless to say, this created a great deal of anger. We had less than two hours of light left, had two companies to get in, the main body was on the middle of highway E65 6-7 km away, but the media was not at all concerned about our safety or our mission. After conferring with 2 Panther 6 (LTC Anderson), I granted them 30 minutes and then we

were going in. Thus, we didn't begin plowing until about 1900 (with one hour of sunlight left).

That night, SSG DeMeo of C12 and his crew plowed at least 3000m of earth in 2-3 hours with a partially operable plow (plow's motors wouldn't work to lift the plow and he couldn't use the moon brackets to safely keep the mounting pins in place.) The mine plow is not designed for this purpose, but turned out to be an excellent piece of kit. SSG DeMeo also pounded pickets into points along the perimeter where I wanted each of the vehicles. We did not put chemlights on the pickets because we were extremely concerned about light discipline.

One thing I didn't think about was the effect on the dismounts. I choose to put the AA 1.5 km away from where A Co's dismounts were. So, the A Company CO had to make his men hump uphill to the AA with all their 100-lb. rucksacks on their backs. I felt miserable for those guys. They didn't start moving in until 2000, just as the sun was going down. At about 2100, I raced back to the main body to lead in the company. Since time was extremely critical, the platoons received their AA instructions on the move. 3rd Platoon and one section of M2A2s would take the western perimeter. 1st Platoon and the other section of M2A2s would take the southern perimeter. The trains and my tank would consolidate in the center. By about 2200, the whole company was moved in. I set security at 50% for the night, wake-up at 0500, and stand-to at 0530. A/2-505 took the N-E perimeter. Though these great airborne troops were extremely tired, they greatly appreciated C12's ability to plow up a safe area for them to set up, free from the worry of mines.

At about 2300, LT Mitchell was finally close enough to be in FM communication with me. He was south of Urosevac and had the now-repaired PLL truck, the M88, and the tool truck with him. (C14 was left behind in Macedonia near the refugee camp at a British UMCP.) Since he didn't know the route in, I had to go back out of the AA to pick him up and lead him in. Once again, the media got in the way. After a heated discussion with their man in charge, I decided to go around them. I justified this by believing that any mines I hit would cause much greater damage to them than us. At about 2400, I finally got linked up with LT Mitchell and brought him safely into the AA. Thus ended our first, very historic, very long day in Serbia. Camp Bondsteel was established.

Force Protection

Our mission was to secure the town of Kacanik. Kacanik is a natural urban, mountain fortress. It is located at the mouth of the Lepavac River valley; if you control Kacanik, you control the southern route to Macedonia. It is not a good place for tanks. We had reconned it earlier the week prior. We knew we couldn't even get our tanks into the center of the town. I decided to set up the company in the town's abandoned high school.

The school was an excellent HQ and place to house my men for several reasons: it was on a hill outside, but overlooking, the main part of the town; it was surrounded by a high fence; it had running water inside (though not potable); it had good stand-off range for any would-be terrorists; and it had plenty of rooms to house my men. Occasionally, it had working electricity, and it was near the main highway. No one could enter the town without going past the school under the watchful eyes of my rooftop sentries. I felt that if relations with the UCK turned ugly, we could defend ourselves well from there. For added security, I posted two M2A2s outside the main gate of the school and two on some high ground between the school and the main highway.

Developing a security plan for my tanks was a more vexing problem. Kacanik is divided by a creek that spills into the Lepavac River on the edge of the town. I could not get my tanks safely across the bridge crossing the creek because it would carry only about 25 tons. The only place I could park my tanks was on a concrete parking lot in an abandoned factory, which turned out to be a good location because it was where the creek and the river joined, partially surrounding us with a natural "moat." The concrete lot would be a great place to conduct maintenance and was only 200m from the school.

The force protection plan for our "motor pool" was developed by my XO, LT Mitchell. Like 70% of my company, Mitchell had served in Bosnia and understood the nuances of force protection. He surrounded the entire area with concertina. One man would stay with a tank at all times. My maintenance team housed themselves in the maintenance bays of the factory. Mitchell then lined up the tanks parallel to the maintenance bays and facing the gate to the factory (our exit). It became SOP for each tank to spin its turret at a 90-degree angle with the gun tubes facing the apartments across the creek. The crews and guards would

sleep under the bustle rack and drape their tank tarps down to the ground. Thus, when not conducting maintenance, any would-be snipers could not see our soldiers *and* they could also exit the motor pool with relative speed. Pointing the gun tubes towards the apartments across the creek in full view of the Kacanik citizens also created a very intimidating image.

Mounted Patrols in Kosovo

Those unfamiliar with the Balkans state that it is not tank country, that it's too mountainous for tanks, and too wooded for tanks. This is only true to an extent. Much of Yugoslavia has difficult terrain for M1A1 operations. This is true in parts of Kosovo. But Kosovo is not *nearly* as mountainous as Albania, Montenegro, and Bosnia. It is interspersed with mountains but, like most of Serbia, is covered with fertile farmland. Geographically, southwestern Kosovo is a beautiful land and a good place for tanks. We took our tanks where no one ever dreamed the Abrams could operate. Operating in the mountains was often very frightening, but the expertise and bravery of our tank commanders always showed through. I am proud to say that even under difficult stresses, we sustained only one injury, a sprained ankle that one of our mechanics received when he fell off a 5-ton truck.

Working for the light fighters of the 2-505th ABN was a great joy. Though the men of the 82nd Airborne did not understand the nuances of mounted warfare, we never had a problem operating with them. LTC Anderson's leadership style was very, very decentralized. He gave commanders his guidance, assigned us an area of responsibility, and left it up to us to develop the situation and accomplish our mission unrestrained by strings from higher headquarters. We were not required to give battalion overlays of our routes of march or alpha rosters of the men we were taking on patrols. If we were having trouble with a local UCK "warlord," he would rush to the scene and put them in their place. He guided us to strictly enforce the terms of the Military Technical Agreement between KFOR and the UCK. Setting this tone early may have been a contributing factor to our sector being the quietest zone in the country today.

We conducted the majority of our patrols north of Kacanik, between the Kurkulica and Samok mountain ranges. Our area of operations extended approximately 15 kms north of Kacanik and the Narodinka Valley, 9 kms in width. Since this was a wide area to cover, I

broke down our AO into three sectors: south, east, and west-northwest. We patrolled the W-NW and eastern sector the most, because that's where the majority of the Serb peasant farmers lived. By now, most of the remaining Serbs were very old men and women who posed no threat to the Albanians.

A mixed tank/Bradley section was given a different sector to patrol each night. Each patrol usually consisted of one or two tanks and one or two Bradleys for a total of three to four vehicles. The tanks would lead, followed by the Bradleys with dismounts. Since we were short dismounts, we developed creative ways to increase our dismount strength, including using the maintenance M113 with armed mechanics, a squad of engineers in an M113, and conducting joint patrols with the 18th Polish Airborne Battalion. The leader of the patrol would choose his own route within his sector. I would lead a section every other night. I gave the patrol leaders guidance, based on our own intelligence gathering, of which villages we needed to dismount in and patrol by foot. I also gave guidance to rush to any area whenever we saw a fire beginning.

The Poles began joint patrols with us on the first of July. They were mounted in their air-droppable Honker 2324, which is a four-wheeled vehicle that could contain up to six dismounts in the rear. It was an interesting sight to see M1A1s in the lead, followed by two Honkers and an M2A2. Though this was completely non-doctrinal, it got the job done.

Within the town of Kacanik, we conducted three dismounted patrols daily, one before noon, one after noon, and one at night. Each day, we varied the exact times of the patrols. As mentioned earlier, everyone, to include medics and mechanics, participated in these daily dismounted patrols of the city because we had so few dismounts. It turned out to be a great morale boost for soldiers who do not normally conduct these types of missions. Additionally, it prevented us from "burning out" the dismounts of our attached infantry platoon.

Albanians began burning Serb homes about two days after we took over Kacanik. Most of the fires started about 2100. Thus, we conducted the majority of our patrols at night, beginning at 2000. When the arsons began, the Albanian villagers became more suspicious of us. A few times we received fire. I am quite certain that this fire was from elements in the UCK. Like many renegade bands in



"I am quite certain that the sight of M1A1s in remote villages made a huge psychological impact on the people of Kosovo..." An M1 keeps an eye on things from its position on a Kosovo roadside.
 Photo: SFC Garry H. Bleeker

the Balkans, they would always talk very tough, but back down quickly when threatened. Overall, we captured 14 renegade UCK members and confiscated about 36 weapons of various type. I cannot say how many arsons, lootings, and robberies we prevented by our nightly patrols, but I am quite certain that the sight of M1A1s in remote villages made a huge psychological impact on the people of Kosovo.

Winning Hearts and Minds

Winning the hearts and minds of a local populace is a key to successful MOOTW operations. It revolves around demonstrating to the local populace that you are a neutral official willing to assist them and their needs. It is important, because you are an armed foreigner on their native soil.

My experience in Croatia taught me that Balkan culture creates masters at passive and creative resistance. In order to prevent this type of resistance, you must persuade them to work with you, and not against you. This is particularly difficult in the former Yugoslavia, stemming from centuries of animosity between various ethnic groups. But the Balkan culture often reflects the concept that, "I won't do anything for you unless I have something to gain by it... if you take something away from me, you must give me something back in return." If you violate this cultural axiom, you will not only cause unrest, but it could get you killed!

Team C, 2-505 ABN used three methods to overcome this cultural barrier. First, we demonstrated very visually that

we were now in charge, and any issues at all had to come through us. Second, we tried to be as helpful and as courteous to the villagers as we possibly could. This helped us gain critical intelligence and find pockets of resistance. The fact that I spoke Serbo-Croat was extremely helpful as well. Finally, we met with the UCK leaders and laid down the law over what they could and could not do. This three-pronged approach worked for us, and is important if you are going to tame a larger populace with a much smaller armed force.

Balkan people respond very well to symbolic acts. The first thing we did in Kacanik was raise the American flag over the school. Its mere presence demonstrated to the people the Americans were in charge.

Usually the Albanian villagers were friendly and helpful. They viewed us as liberators and would shower our tanks with flowers, cherry branches, and bitter tasting Yugoslavian "Partner" cigarettes. When we dismounted, we asked them a series of questions to include: Where do the Serbs in this area live? Who is the leader of the village? What party does your leader belong to? Are there any suspected mass grave sites in the area?

Where are the mines? Where is the unexploded ordnance? These questions demonstrated to the locals that we cared about them, and was a vital necessity for gathering intelligence.

We quickly learned from the locals the areas that were free from mines and areas that were not. Mostly, mines were laid on

“No unit that understands force protection goes anywhere without tanks. Tanks will comprise a central element in any force package for stability operations....”

the top of hills and along the sides of roads. UXO was *everywhere*. It was clearly evident that the U.S. Air Force rained bombs on this country. Some hit enemy vehicles, some destroyed Albanian tractors, and some did not explode at all. The fact they were everywhere heightened our awareness and gave a new importance to the plow tank.

I was particularly fortunate because I could speak with most Kosovar Albanians in Serbo-Croatian. They were stunned to learn that the “Comandante” could talk with them in their native tongue. Even after we received translators, I still made a point of talking with the locals in Serbian whenever possible. However, I also explained to them that I had learned “Serbian” while serving in Zagreb, not Belgrade. We also gained their trust by accepting their gifts of Turkish coffee whenever it was offered.

The team ISG, Steve Lamb, played a critical role in winning the support of the people in Kacanik. He went on dismounted patrols through Kacanik at least twice daily. He greeted the head doctors at the hospitals, the main bakers, and the town elders. His presence sent a feeling of security through the town. We also had an arrangement where he avoided direct contact with the UCK. The only American the UCK were to talk to was myself.

The UCK was an extremely disorganized band of unemployed young men, gun smugglers, and thieves. It did have a small number of very professional soldiers who had served in the VJ for a number of years. Yet, typically, these professional soldiers were not in charge. Most of the UCK leaders were men like Xhrabir Zharku, aka “Chorie,” with whom I had to deal. Mr. Zharku got his position in the UCK for a number of reasons: he was a member of the influential Zharku clan of Kacanik; he had some form of Western education and spoke good English; his family lived comfortably as “refugees” in Sweden; he met his wife in Connecticut where he lived for a year. Most importantly, Zharku was very wealthy by Kosovar standards. Like many Kosovar Albanians, he made his money smuggling guns into Croatia and Bosnia during the war between 1991 and 1995. I did not think of him as a military

leader; he was a cross between a politician and local strongman.

At first, I had daily meetings with Mr. Zharku in his office in the former MUP building of downtown Kacanik. These meetings produced few results. He had no desire to work with NATO or me because we were his competitors for power. He was also frustrated because we consistently demonstrated to “his” people that we were in charge and could help them in ways that he never could. The people of Kacanik *loved* my men and this seriously irked him. He consistently tried to threaten me, but would always back down when I acted tough and followed up my promise to enforce the MTA with action. My last meeting with him followed our raid on a factory that renegade UCK thugs refused to surrender. After that, he disappeared and did not resurface until we left Kacanik on 9 July.

The redeployment was as exciting as the road march into Kosovo. We were pulled out of Kacanik on 9 July and reported back to Camp Bondsteel on the 12th. After staying in Bondsteel for a day, performing maintenance and getting the wheels ready for the road march, we moved to Camp Able Sentry, Macedonia. From there we were loaded on HETS and moved to Thessalonika, Greece, to be shipped back to Bremerhaven and home.

Reflections on Kosovo

From no-notice deployment, force protection, stability operations, entry operations, and logistic support, the Flying Coyotes learned many lessons about the use of heavy armor in stability operations. The most important lessons we learned were:

Be ready: The last thing we expected was to receive a call sending us to war with less than 30 days notice. It CAN and WILL happen to you. Pretending otherwise is self-defeating.

Joint operations do work, but there are many sets of rules. Work with the other services, because working against them will shut down your operation. The C-17 is an excellent aircraft, but it takes a committed team of Air Force and Army personnel even to get you to the plane. Working through that system proved to

be one of the hardest challenges of the entire deployment.

No unit that understands force protection goes anywhere without tanks. Tanks will comprise a central element in any force package for stability operations. Although we had never trained for mounted stability operations, we adjusted our METL according to the ROE and that worked effectively for our conditions.

I attended a briefing once where a Marine tanker in Somalia said that three things a tank does in war are reversed in stability ops. In high-intensity conflict, you are looking for firepower, mobility, then protection. He stated that in peace ops, these three are reversed — you desire protection, mobility, and then firepower. We will train for the next peace deployment using this axiom.

It takes the same amount of logistics support to sustain operations for one tank as it does for 14 tanks.

The Flying Coyotes were alerted for possible deployment on 1 April and deployed on 1 May. They spent one month in Albania, and another in Kosovo. They redeployed on 18 July, having never lost a man or vehicle in combat or to accidents. This is the modern face of deployments, a standard set by the Coyotes — a standard for which the entire Armor community should be forever proud.

CPT Marshall Miles graduated from USMA in 1993 with a degree in U.S. history. After AOBC he served as a platoon leader and XO with 2-8 Cav, 1CD, Ft. Hood, Texas, including two NTC deployments and one Foal Eagle deployment to Korea. In January '96, he became S3 Air for 2-8 CAV, and, in November, volunteered to participate in Operation Joint Endeavor, with assignment to Support Command under IFOR/SFOR in Zagreb, Croatia, for 12 months. He returned to 2-8 Cav and assisted in 2-8 Cav's transition to the M1A2 for his last 8 months there. After attending FAOAC and CAS3, he served as S3 Air for 1-35 Armor until his deployment to Albania on 20 May 1999.

Fifty Years in Patton's Shadow

by Major General Stan R. Sheridan, USA (Retired)

President, Patton Museum Development Fund/Cavalry-Armor Foundation, Inc.

It has been well over 50 years since the combat leadership and the force of General George S. Patton Jr. has been felt on the battlefield, but today his memory stands tall worldwide. His legacy and his shadow solidly rest on a piece of land in north central Kentucky dedicated to his memory and the mounted warriors of the 20th century. Some fifty years ago, on April 30, 1948, the U.S. Army Armor Center at Fort Knox issued General Order Number 6, establishing a museum as a tribute to General Patton and the thousands of soldiers who fought for the freedom of their fellow Americans in WWII. A year later, on May 30, 1949, the post dedicated a WWII-era building on Old Ironsides Avenue, in the center of the Armor School, as the Patton Museum of Cavalry and Armor. This past May, the museum marked its golden anniversary.

Originally, the museum was to be a place to house and display a few pieces of WWII armor equipment that General Patton had sent back to Fort Knox before his death in late 1945, along with some of the General's personal memorabilia. By 1962, the museum had become an integral part of the Armor School and a long range plan was prepared to develop a program of growth and improvement for the future. A year later, the Department of Army approved the facility as an official Army museum. As fate would have it, the building on Old Ironsides soon became too small for all of the tanks, artifacts, armor, and cavalry memorabilia that arrived at Fort Knox. It had become obvious that a world-class museum of Armor and Cavalry was developing, one that needed a new location and much larger accommodations to house the extensive and growing collection.

The Army provided the land, adjacent to Keyes Park, and private donations generated enough funds to build, dedicate, and open the first phase of the museum building on 11 November 1972 — the 87th anniversary of General Patton's birth. Since then, the museum added four additional exhibit wings and the 300-seat Abrams Auditorium, and also a Memorial Park commemorating U.S. Army and USMC Armor units from WWII, Korea,

Vietnam, and Desert Storm. The building and the Memorial Park represent the Patton Museum complex, which is visited by over 400,000 annually.

This is quite an achievement, considering that the total complex was constructed and paid for by privately donated funds at no cost to the U.S. Government. Those funds were raised over the years by the dedicated efforts of the trustees of the private Patton Museum Development Fund/Cavalry-Armor Foundation.

The U.S. Army owns the museum's land and buildings and pays for the general upkeep of the property and the salaries of the museum staff. Cutbacks since the end of the Cold War have impacted the museum by cutting personnel, which has limited the staff's ability to change and add exhibits and restore equipment for display. Unfortunately, there is no end in sight to the impact that this austerity has and will continue to have on the Patton Museum.

Today, the museum is housed in a building which includes an auditorium, a small and crowded reference library, a gift shop, and extensive exhibit halls tracing the history of mounted warfare from the earliest cavalry days through Desert Storm. Also featured is the Patton Hall, with the General's famous pistols, the sedan in which he was fatally injured, his life-like statue, and many items of personal memorabilia. Over the years, the Patton family has been more than generous in supporting the museum and in sharing with it the General's personal artifacts, both on loan and as outright gifts. The result is the finest public collection of Patton memorabilia in the world.

Several years ago, it was decided to honor the world's great armor commanders with their portraits on a Commanders Wall near the museum entrance. Each portrait depicts the commander during a critical wartime action. Today there are four portraits, all by *ARMOR* Magazine's Jody Harmon, showing General Patton at the 1943 battle of El Guettar in North Africa; German Field Marshal Erwin Rommel at the 1942 siege of Tobruk in North Africa; General Creighton W.



On exhibit at the Museum is the Cadillac sedan in which General Patton was fatally injured following World War II.

Abrams as commander of the 37th Tank Battalion in the December 1944 relief of Bastogne; and Israeli Major General Israel Tal as commander of the Steel Division in the 1967 Arab-Israeli Six Day War. Many consider these four to be among the greatest mounted warriors and commanders of the 20th century, regardless of country. We know that there were other great armor commanders that should be recognized, and others will periodically be added to the Commanders Wall. (Nominations for additions to the Wall should be sent to the museum for consideration.)



Museum reenactments feature restored and working vehicles, like this Hetzer tank destroyer used by Germany in WWII.

In addition to all of this, the museum has another 100-plus combat vehicles in storage and waiting for restoration. These vehicles, which trace the history of the mechanized force from its inception, are in "as-received" condition and are in



cramped storage throughout Ft. Knox. The museum is now full, without room for additional displays and exhibits or the space for restoration. Only an expansion of the current museum building and an infusion of funds for vehicle restoration and new exhibits will solve the problem.

As a result, the Cavalry-Armor Foundation — the museum's private sector fundraising arm — is in the process of initiating a major fund-raising effort to support a threefold expansion of the museum from its current 50,000 sq. ft. to over 200,000 sq. ft. At the same time, the expansion will also give the museum the room it sorely needs to properly display the memorabilia and artifacts that trace the exploits of the great armor and cavalry units — divisions, regiments, battalions, and companies — whose WWII associations are beginning to close down due to the passing of their members. The Patton Museum sees itself as the ultimate repository of the history, heritage, and artifacts of those WWII units long after the sounds of their battles have faded into the pages of history. Such an expansion will allow for storage, restoration, and exhibition of all donated vehicles, as well

as the addition of new exhibits and interactive and computer-assisted displays. (In the interactive area, we hope to be able to put a visitor in the driver's, gunner's, or commander's seat of a tank, and through very realistic simulation, fight a tank battle, such as the 2nd Armored Cavalry's Battle of 73 Easting during Desert Storm and/or other battles from WWII, Korea, or Vietnam.) This expansion effort will also allow for the relocation and enlargement of the museum's library and



The Museum's "living history" exhibits give visitors and families a chance to closely inspect vehicles that have been painstakingly restored by the Museum's staff.

permit it to realize its full potential to be the premier mounted force warfare reference library in the world. The master plan to accomplish the total expansion is in hand, and a large three-dimensional scale model of the new museum complex is on display in the entrance of the museum. All we need now is the 15 or so million dollars to make it happen. The strategic planning for raising those funds is in process. In closing, it's obvious that the Foundation has bitten off a large chunk of the expansion elephant, but it feels that it can pull it off in a phased effort over the next five to ten years. The trustees of the Foundation, including many former distinguished leaders of Armor and Cavalry, are committed to this effort and each feels strongly that the Patton Museum must continue to grow well into the 21st century as the nation's repository of the history and heritage of yesterday's, today's, and tomorrow's mounted warriors. The Patton Museum today, ever standing proudly in Patton's shadow, is a true jewel in the crown of U.S. Army museums, and all Americans should visit this piece of history that so ably tells the heroic story of the 20th century's mounted warrior.

Two WWII Tank Destroyers Saved from the Balkan Wars Are Returning to U.S. Museums

The M36 tank destroyers were among the most effective weapons against superior German armor in World War II, with a 90mm tank gun that could defeat the heaviest German tank. Until the first M26 tanks, with their 90mm guns, arrived in Europe in the final weeks of the war, the M36 was top gun in the Allied order of battle, the sniper called up when front line troops faced a stubborn Tiger or Panther.

Most of the M36s were transferred to Allied armies after the end of the war, including some to Yugoslavia in the early 1950s. The United States Army built the M36s to implement a tank destroyer doctrine that had turned out to be a mistake. While they looked like tanks, and were built on the Sherman M4 chassis, tank destroyers were only lightly armored. Crews fought from open-topped turrets and were vulnerable to artillery air bursts. Facing the worst winter in 20 years during the 1944-45 campaign, makeshift roofs were added to the M36s, but they were never comfortable battle vehicles.

When the civil wars began in Yugoslavia, alert TV watchers would catch an occasional glimpse of one of these vehicles on the evening news, moving like ghosts through Balkan towns. These 50-year-old fighting vehicles were now rare, indeed, but the Yugoslavians seem to have never discarded anything in their inventory, and here they were, rumbling into yet another war.

The sight of these rare vehicles heading into combat to face much more modern Soviet-built equipment greatly upset experts who knew how unusual the M36s had become. One museum director, Ceilia Stratton of the 4th Infantry Division Museum at Fort Hood, Texas, said she almost cried. "I knew they were doomed," she said. Fort Hood was the base for the WWII Tank Destroyer Command, and getting an M36 for the museum's holdings was something she had only dreamed about.

Also watching the news and glimpsing this rare WWII armor was Terry Dougherty, an acquisition specialist with the Army's Center for Military History, and



A WWII M36 tank destroyer is loaded on a transport at the Croatian port of Rijeka. One of the rare vehicles was being shipped to the 4th Infantry Division Museum at Fort Hood, Texas, and another to the Patton Museum of Cavalry and Armor at Fort Knox, Ky.

Photo: Robert Tilson

Charles Lemons, a curator at the Patton Museum of Cavalry and Armor at Fort Knox. Both Lemons and Dougherty feared that the M36s would not survive Serb gunfire or NATO bombs.

At the Patton Museum, curator Charles Lemons said their M36 had been hit by a large caliber HEAT round that passed through the upper section of the transmission housing, sliced through the cabling on the radio, and impacted on the hull side wall.

The picture brightened somewhat when soldiers of the 1st Armored Division entered Bosnia in late 1995 and found that many of these museum pieces had survived intact, some in very good condition. Army historians then moved in, beginning two years of negotiations with the Croats, who were the most recent owners of the tank destroyers. The vehicles were eventually purchased for about \$14,000 each.

With the negotiations successful, the Military Traffic Management Command took charge of bringing the tank destroyers home to the U.S. One was to be returned to Fort Hood's museum, the other to the Patton Museum of Cavalry and Armor at Fort Knox, Ky.

At the Patton Museum, curator Charles Lemons said their M36 had been hit by a large caliber HEAT round that passed through the upper section of the final drive housing, sliced through the cabling on the radio, and impacted on the hull side wall. The entry hole had been welded over with a patch.

The tank destroyer's original gasoline engine had been removed and replaced with a Soviet T-55 power plant because of the lack of spare parts. "It's a great conversion. I was really impressed," Lemons said. "Originally, those vehicles had a top speed of maybe 25 miles an hour. With that engine, I imagine she'll really get up and go."

This article was based on information provided by John Randt, a public affairs officer in the Military Traffic Management Command. — Ed.



The “CANAM Shoot,” 1999

Canadian, U.S. Crews Train Together, And Shoot Together in Home and Home Series

by Captain Mark Nelson

Keeping alive the spirit of the old Canadian Army Trophy tank gunnery competitions held in Europe in the 1980s, Idaho National Guard units and Canadian Army armor units have been training and shooting together for several years now in what has become popularly known as the “CANAM Shoot.”

This past year, the National Guard unit was First Platoon, Charlie Company, 2d Battalion, 116th Cavalry Brigade. The unit conducted its annual training (AT) at the Wainwright Training Area in Alberta, Canada, the second time a platoon from 2-116 has trained with the Canadian Army and competed in the Canadian/American Gunnery Competition. Proponents of the CANAM Shoot, as it is popularly called, say it was designed as a revival of the Canadian Armor Trophy (CAT) competition from the 1980s and early '90s held in Germany.

The first CANAM Shoot was conducted at Gowen Field, Idaho, in the spring of 1997. That year, the 116th Cavalry Brigade hosted the event for the Lord Strathcona's Horse Regiment, which traces its origins to the School of Mounted Infan-

try, established by the Canadian government in July 1885. The regiment participated in both World Wars and the Korean War. It has served in Bosnia and is currently supporting NATO in the Kosovo occupation. The regiment's home is Edmonton, Alberta. In 1997, the Canadians trained and fired the M1A1 to win the first competition.

This year the Canadians hosted the event at Wainwright Training Area, Alberta, a maneuver training area with numerous gunnery ranges and an artillery impact area. Prior to the CANAM competition, the U.S. platoon was placed under the operational control of C Squadron, Lord Strathcona Horse Regiment, Royal Canadian Armed Forces. Major Paul Dangerfield, the squadron commander, commanded them during tactical maneuver training.

The Canadian squadron is similar in composition to the U.S. tank company, but has 19 tanks, compared to 14, and is commanded by a major. The platoon was integrated into C Squadron's maneuver plan as the third platoon.

Preparing to begin maneuver training at the Wainwright Training Area in Alberta, Canada are, above left, a Canadian Army Leopard I, and at right, a U.S. M1A1 crewed by National Guardsmen.

Note lack of MILES belts—the Canadians depend on O/Cs for adjudication.

The two-week AT consisted of a live-fire exercise during the first week. C Squadron conducted a total of three squadron (company) offensive live-fire iterations with one iteration daily. The scenario consisted of a series of offensive engagements against a notional combat reconnaissance patrol, forward security element, and advance guard main body. The Canadian platoons fired live ammunition during all three iterations. During the first two iterations, the U.S. crews familiarized themselves with the terrain and command and control relationship with the Canadians, and fired live ammunition during the third iteration. The U.S. platoon was primarily used as the supporting effort during the squadron's deliberate breaching operations and assaults



Above left, Canadian and American platoons pose for a “take-home” photo at conclusion of the exercise.



Above, the American brigade commander, the American platoon leader, and a tanker from the Boise unit accept the trophy.

onto the objective. This was a combined arms live-fire exercise, with field artillery integrated into the exercise to provide training in calls for indirect fire.

Live artillery rounds landing on the objective while overwatching with direct fires added to the realism. The long-range fires of the M1A1 were impressive to the Canadian forces. They gained an appreciation of the increased lethality and range of the 120mm, versus the 105mm, main gun.

The second week of annual training consisted of regimental (battalion) maneuver training. Again, the U.S. platoon conducted training as part of C Squadron. The three days of maneuver training consisted of a series of offensive attacks against a defending enemy. The scenario was similar to that of the live fire but was replicated using a sister unit as the opposing force. The large training area provided invaluable maneuver experience, with densely vegetated terrain that was very different from the desert conditions of southwestern Idaho. The biggest shortfall in the training was the lack of MILES. The exercise controllers assessed casualties.

The climax of the AT was the CANAM platoon gunnery competition. The CANAM Shoot is based on a Tank Table XII day scenario. Platoons are given an operations order, conduct their troop leading procedures, and execute the lane. Only the gunnery portion of the exercise is used in the score. The gunnery competition consisted of a prep day and day of execution. Each platoon zeroed their weapons systems and conducted troop-leading procedures on the prep day. The platoons started in a tactical assembly area and attacked the course in true tank table XII fashion. The actual range was 800 meters wide and consisted of three series of hills on which the platoons conducted the defensive engagements. The

offensive engagements were conducted while executing platoon bounds to the next battle position. There were a total of 28 vehicle and six troop targets presented. The U.S. platoon shot first and earned a score of 29, hitting 26 vehicle targets and three troop targets. The Canadian platoon shot second and earned a score of 28, hitting 26 vehicle targets and two troop targets. The actual competition consisted of two presentations of four targets each, with eight targets presented. The U.S. platoon won the competition by a single troop target and returned to Boise, Idaho, with the CANAM trophy. The close results reflect the gunnery expertise of both the Royal Canadian Armored Force and the Idaho Army National Guard.

The result of the CANAM competition speaks for itself with respect to gunnery training. The AC/RC officers and NCOs who supported the unit conducted a Training Assessment Model (TAM) for the platoon. The unit will now be able to integrate the lessons learned as documented in the TAM and numerous after-action reviews conducted in the field to assist them in planning their future training.

Conducting AT with the Canadians provided several benefits for the 2-116th. First, it provided an invaluable maneuver and live-fire training opportunity for its soldiers and junior leaders. Second, it provided a unique opportunity for U.S. soldiers to train with and become familiar with conducting tactical operations with an allied force. And finally, it provided mobilization training for both the soldiers who deployed, as well as those who facilitated their deployment at the Mobil-

ization Station (MS). As an armor officer serving in an AC/RC assignment, I believe this is an outstanding opportunity for the ARNG, as well as the active Army, and look forward to assisting them train up for CANAM 2001. The downsizing of the U.S. Army and its great number of worldwide commitments increase the possibility of the National Guard being deployed and fulfilling its role as a part of the Total Force Army.

CPT Mark D. Nelson was commissioned in Armor in 1990 through the ROTC program at the University of Utah. As a lieutenant, he served as a tank platoon leader and assistant S3 in 6-40 Armor, Berlin Brigade, and as a tank and scout platoon leader in 1-8 Cav, 2d Bde, 1st CD, Ft. Hood, Texas. As a captain, he served as regimental plans officer, 11th ACR (OPFOR), 1/11 ACR S4, and commanded D Company (4th Motorized Rifle Battalion), 1/11 ACR (OPFOR), at the National Training Center, Ft. Irwin, Calif. He is a graduate of AOBC, SPLC, BMOC, and AOAC, and holds a Master of Public Administration (MPA) from Golden Gate University. He is currently serving in an AC/RC assignment as an armor trainer with the 3d RTBn, 5th AR Brigade for the 116th Cavalry Brigade, Idaho Army National Guard, at Gowen Field, Idaho.



The Anonymous Battle

by John B. Poindexter

This article grew out of a professional development program at the 11th Armored Cavalry Regiment, Fort Irwin, California, given by the author to the regiment.

John B. Poindexter was former commander of the regiment's A Troop in Vietnam, and was invited to discuss small unit leadership with junior leaders. The basis for his OPD session was a manuscript that he began to write 29 years ago, with the intention of publishing it in a military journal, but it was set aside and not completed until recently.

Though almost 30 years have passed since the "Anonymous Battle" took place, it still has lessons that today's leader can apply to small units. —Ed.

Foreword

The unifying theme of this fragment of the regiment's history is the American fighting man. His obedient and gallant performance in South Vietnam has been

obscured over the years by reports of drug abuse and civilian atrocities and by numerous analyses of our country's conflicting feelings about the war. We veterans of America's first defeat have said little in public about all of this. Some among us may feel that they were coerced into bearing a disproportionate share of the wartime burden by an ungrateful society. Others, including your predecessors, the combat veterans who attend the regiment's annual reunions, share a different attitude.

The men in ground combat units, probably no more than 10 percent of in-country personnel, performed their hazardous duties with skill and, if not always with dedication, at least with resignation. None of them "gave" his life, though each risked death continually for many months at a stretch under conditions that would earn the respect of soldiers of any era. Likewise, no American "lost" his life, though 59,000 were slain by a resourceful and motivated enemy. Personal confidence born of harsh experience and an innate sense of obligation, first to their

buddies and then to their unit, are the qualities that sustained our men in South Vietnam.

The anonymous battle that occurred near fire support base Illingworth on 26 March 1970 lives only in the memories of the young men who fought it. One of these men described the battle and the tragic night that preceded it to the author of a history of one phase of the war in Vietnam. An excerpt from this book, *Into Cambodia*, recalls the events of 26 March as they appeared to a young and probably inexperienced cavalry crewman:

TROUBLE WAITING TO HAPPEN

Specialist Fourth Class Angel E. Pagan, a track crewman from Puerto Rico assigned to A Troop, 1st Squadron, 11th Armored Cavalry, was sleeping before his turn on guard when his buddy, Rodney Dyer, was suddenly shaking him awake.

Explosions.

Flashes erupted from within the laager circle, lighting up the darkness, and Pagan, instantly awake, realized that burn-

ing embers had landed on his poncho and fatigues. He smothered them and jumped to his feet as Dyer rushed on to climb into the driver's compartment and start their track.

Explosions. Explosions. Explosions.

Pagan looked shocked at the mortar tracks in the center of the laager, burning and exploding in the dark. Two men were lying in the burning grass near the burning tracks, their fatigues aflame, and Pagan realized that they were still moving, and his mind reeled. Oh God, he was watching his buddies die right in front of him and he couldn't do a thing about it.

A medic tried to get through the flames.

He was stopped, forced back to safety. Everyone was scrambling aboard their tracks and hauling a __, running over their rocket screens and claymores in their chaotic escape.

Apparently, as the mortar tracks had been registering fire in the jungle surrounding their laager, a defective round had exploded in one of the tubes, igniting a chain reaction of explosions in the mortar ammunition stacked nearby. After their hasty flight, the troops spent the night sitting atop their vehicles, watching the explosions and fire. Come daylight, they drove back through the smoldering grass to police up the charred corpses of their buddies from the mortar section. Some of the bodies had been blown to pieces, and as these scraps were gathered into body bags, words were spoken only when necessary.

A Troop had just entered a world of hurt.

Specifically, they were in the fire support base Illingworth area of operations of War Zone C, under the operational control of the 2nd Battalion, 8th Cavalry, 1st Cavalry Division, whose newest fire base of the week was smack atop a known infiltration route and attracting much enemy attention. So it was soon after the mortar disaster that the ACAVs and Sheridans of A Troop were laagered in a clearing they had flattened in the underbrush to allow in a resupply bird when C Company, from their adoptive straight-leg battalion, humped in through the sun-dappled forest.

In the morning, 26 March 1970, C Company humped off through the woods and bumped into a company and then a battalion of the 95C NVA Regiment, which, in two hours, had Charlie Company pinned down from three sides. Three GIs were killed, some thirty wounded.

The wounded included the company commander. Lieutenant Colonel Conrad, CO, 2-8 Cavalry, instructed Captain Poindexter, CO, A/1-11 ACR, to immediately return to FSB Illingworth to drop off his disabled vehicles and to take aboard A/2-8 Cavalry from the berm line, and then to rush to the rescue of C/2-8 Cavalry. With the grunts of Alpha Company humping along on both sides of A Troop's column, they had to bust jungle almost the whole way in. They were moving single file, the lead tracks smashing down saplings and brush. Then they roared into the hasty, besieged perimeter of Charlie Company that was obscured by vegetation and roaring with gunfire. The troop tried to come on line — grunts were strung out in the vegetation as flat as they could get — and rocket-propelled grenades shrieked out of the jungle at them, then a troop's worth of machine guns and main guns opened up as grunts scrambled on their hands and knees to get behind the vehicles. Crewmen holled at them to get the hell out of the way.

Everyone was firing and firing and firing, and there were Phantoms and Cobras orbiting and expending in sequence, orbiting and expending, the concussion walloping the men on the ground, showering them with shattered tree limbs. Captain Poindexter was everywhere, encouraging and directing. Crewman Pagan noticed that the captain's hand had been hit badly — he could see the bone — but Poindexter wasn't slowing down. Neither was Pagan. Three vehicles were disabled by RPGs, and he overheard a radio request for a medic. Pagan jumped from his track to find the medic and lead him to where the wounded were, then he ran back to his vehicle. Sergeant Young, his Tango Charlie, jumped in his s__ about leaving without permission, but finally just smiled and said to forget it.

The fire continued raining in both directions. The NVA were dug in, and although the sheer weight of A Troop's suppressive fire may have splintered the logs around some of the bunkers, may have disintegrated the men inside — the official body count was eighty-eight — it could not defeat a battalion. Captain Poindexter, though painfully wounded, was firmly in command of his troop and the two line companies, and he organized a withdrawal. By then it was dark, and flare ships circled overhead, making the forest a surreal carnival of intense white light and black lines from the blasted, silhouetted trees. The grunts helped their wounded onto the tracks, threw aboard their rucksacks and equipment, then

climbed aboard themselves, maybe ten to a vehicle, and hung on for dear life. They backed up to the trail that they had ploughed on the way in. Since everything had fallen forward as the tracks had originally ground in, all the branches and brush now pointed toward them as they tried to get the hell out. The bedraggled column jerked and rumbled its way seven kilometers to the burned clearing where the mortar platoon of A Troop had been blown up, and, with strobe lights pin-pointing the perimeter, numbed survivors rushed the wounded and the dead to the medevacs.

Captain Poindexter went out on the last one. Daylight brought more helicopters with a large ammunition resupply and a TC meeting with each platoon leader and platoon sergeant as A Troop reorganized. Afterward, Sergeant Young told Pagan that he'd recommended him for the Bronze Star, which was later disapproved along with many other awards the TCs had written their crewmen up for. Pagan had nothing to say to either bit of news. He was only doing his job, helping his buddies. They were the best people he'd ever known.

-From Into Cambodia, Spring Campaign, Summer Offensive, 1970, pages 37-39, Keith W. Nolan, Presidio Press, 1990, Novato, California. Used with permission.

That's the way it all appeared to young SP4 Pagan. Here's how I saw those same events after many months in the border jungles.

Alpha Troop's "Welcome" to War Zone C

More than a thousand square kilometers of multi-canopied jungle 100 kilometers northwest of Saigon, War Zone C was a swamp in the wet season and a blistering, dust-caked oven during the rest of the year. The area was a free-fire zone astride the most obvious of the invasion routes from officially neutral Cambodia to Saigon. Long deserted by civilians, it had been an enemy sanctuary and a southern terminus of the supply route from Hanoi since the defeat of the French Colonial forces.

Within two years, Loc Ninh, a town near War Zone C's western boundary, would become the provisional capital of the advancing communist government. The 1st Squadron of the 11th Cavalry had been assigned without respite during the past year to the Iron Triangle, the Loc Ninh area and, finally, through Alpha Troop alone, to War Zone C. Exhaustion was near.



Our first mission in War Zone C was to secure a road construction operation directly through its heavily forested heart to the abandoned village of Katum and the Tin Nhon Special Forces camp near the Cambodian border. The most effective form of protection that Alpha Troop could provide the vulnerable South Vietnamese and American engineers was aggressive patrolling against the invisible enemy. As the engineers' bulldozers hacked the overgrown jungle away from the ancient French roadbed, the troop reconned into territory where non-communist forces had been absent or ineffective for decades. On occasion, our tanks hammered through virgin vegetation and broke into clear oases not entirely reclaimed by the forest. Here once had been a rudimentary civilization, but the area was marked now only by eroding rice paddies and, sometimes, by an incongruous, vine-strangled concrete bridge whose road had long since vanished in the monsoons.

When the highway neared completion, less combat-vital units took over its security. Our 150 men and armored equipment soon were reassigned to serve with a straight-leg infantry unit, the 2nd Battalion of the 8th Cavalry, 1st Cavalry Division (Airmobile), then situated in the Dog's Face region of War Zone C. Not until 1 May 1970, when U.S. forces invaded Cambodia, did we learn why the Army had expended so much effort to build an apparently useless, all-weather road through the center of War Zone C.

Because armored cavalry and unmechanized infantry units are organically incompatible, we had to devise an effective plan of joint action. The best solution seemed to be to cut out a huge swath of jungle and combine an infantry company — Alpha Company of the 2nd of the 8th — with Alpha Troop and allow "Team A" a free hand within the area's specified boundaries. The plan called for the infan-

try to ride aboard the cavalry vehicles and to either support armored assaults or patrol independently, thereby securing for Team A the advantages of speed, superior force, and intensive terrain coverage. As it turned out, this unorthodox field expedient performed well in terms of at least one criterion, enemy body count. But it also drew us into firefights more frequently than might otherwise have been expected, exacting a heavy toll of combat injuries and fatigue-induced accidents.

By the evening preceding the anonymous battle, Team A had learned to draw its vehicles and infantry into a tight circle, much as a wagon train might have settled in for the night on the western plains more than a century ago. However, at close range — and nothing else mattered in the dense jungles along the Cambodian border — ominous dissimilarities were visible even in the dim moonlight.

Instead of fluffy prairie schooners, Alpha Troop's six surviving M551 Sheridan tanks were oriented flat into the jungle wall 50 meters out. The troop's M113 armored cavalry vehicles filled the spaces between the Sheridans at 10-meter intervals. Called "tracks" or "ACAVs" by their crews, 21 of the normal complement of 27 still functioned. Each stood in the defensive circle so that its single caliber .50 and two M-60 machine guns, mounted behind steel gunshields, pointed dead-on into the black curtain of vegetation. In the center of the night defensive position were three 4.2-inch mortar tracks, two armored administrative vehicles and a now-crewless ACAV disabled by a landmine two days earlier.

Weary and depleted, Alpha Company, numbering something less than 100 survivors, was dug into shallow holes scooped out between the armored vehicles. One grunt was supposed to remain awake at each position during darkness, but sleep usually proved irresistible to the infantrymen as long as the reassuring armor was nearby.

Each ACAV crew had placed a shrapnel-projecting claymore mine out front. A thin detonating cord snaked from the mine back to the sentinel's position at the caliber .50 machine gun. Each tank's main gun tube was locked and loaded with a 152-millimeter canister round, which could do to humans what a 12-gauge shotgun does to small birds. Unlike the infantry, most of the cavalry sentinels remained fairly alert, a victory of sorts for personal anxiety over the everlasting fatigue. The explanation for this welcome uptick in discipline was, unlike the peace we often heard about, at hand.

Some weeks before, Alpha Troop had been thrown, without notice, into an earthen fortification north of Tay Ninh City that was garrisoned by the South Vietnamese Army. Our new headquarters had warned us to prepare for an NVA sapper attack on this, the troop's first night in War Zone C. During the moonless night, misty figures crawled in inch by inch, their explosives and assault weapons in tow. The North Vietnamese lost 17 and whatever number of dead and wounded they were able to drag away from the eyeball-to-eyeball struggle. Alpha Troop's casualties required several helicopter evacuations. The South Vietnamese detachment needed none.

2300 Hours, 25 March 1970

By late evening, after the refueling, maintenance and rearming chores that had followed another tense day of jungle reconnaissance, nearly all was still in the diesel fume-permeated air at the night defensive position. On my final circuit of the perimeter, I stepped over Captain Jim Armer's inert Alpha Company infantrymen and tapped on the steel gunshield of one of the ACAVs in the second platoon line.

"Huh, what the ...?" The drowsing crewman supposedly on guard awoke with an irritated start. "Oh, how's business, Captain?" He yawned under heavy eyelids. Not much more than teeth and the dull glint of his machine gun barrel stood out in the dusty moonlight.

"All right," I replied in a tone somewhere between disapproval and hopeful encouragement. "You going to be able to keep your eyes open or do we need to get the next man up?" Although sleeping on guard duty was a serious offense, punishment was without meaning. Jail represented an improvement in lifestyle. As for fines, the threat was humorous in view of the inability to spend military scrip in the jungle. Only habit born of common sense, peer pressure, and the example set by most of the officers and NCOs held the troop together. The purer degrees of leadership were reserved for life and death situations.

"No sir. I'm cool." Smile. "Don't need to wake up nobody else." No man wanted to listen to his buddy complain throughout the next day about double sentry duty. With his eyes now fixed on the wood line where the darkness of the ground merged with the slightly less inky texture of the trees, the guard acted as though he might last awhile.

"OK." I walked on, mumbling meaningless phrases to the other sentries in the

line, most of whom were reasonably alert.

At least twice during the quietest hours of the night we scheduled a “mad minute” during which the command radio operator ordered all vehicles to fire their weapons simultaneously toward the wood line for several seconds. NVA sappers staging a night assault would, thus, be hit on the open ground as they crawled slowly toward our perimeter. This technique had the further advantage of awakening all of the guards. Also, at random intervals during darkness, the mortar section chief fired on pre-selected trail junctions, likely stream crossings, and areas of suspected enemy activity to discourage NVA movement in the vicinity. And to keep the guards awake.

These precautions, together with frequent and erratic movement within our area of operations, had ensured that the troop and its infantry attachment were not attacked at night, a rare achievement in Vietnam and especially in War Zone C. When offensive action was warranted, we set out infantry ambushes and readied a cavalry platoon as a night reaction force. The previous week, an ambush had killed two NVA soldiers who were prowling through a defensive position that Team A had abandoned quickly when mortar fire from across the occasionally neutral Cambodian border chased us away. Another night’s sleep lost, or more accurately, invested.

The arrangements for the evening appeared satisfactory. I headed for the M577 armored administrative vehicle in the center of the perimeter, where the duty radio operator had accumulated the evening’s messages from battalion headquarters. Pushing aside the grease-stiffened canvas flap, I walked into the tent extension attached to the rear of the tall, ungainly track. The sweating radioman, stripped to the waist, was reading a letter from back home in “the world” in the dim light.

“Hi, sir. Nothing special, just the usual stuff. The XO says we got three newbys on the way to replace the medevacs from the mine. Can’t get a new track, though. And headquarters wants to know what the plans are for tomorrow. What’ll I say?”

“I haven’t figured out anything yet. Wait an hour or so until they’ve all hit the rack, then call Flange Control. Tell battalion that we’re going to recon in force near” — we bent over the plastic-coated map with its coded check points that lay on the deck — “charlie papa Kentucky. I’ll probably change that in the morning to something a little tougher, but that’s

OK for now. You got the times for the mad minutes?”

“Sure, right here.” He returned to his letter as I walked back through the canvas entrance to a cot devoid of bedding that had been set up in the less-stifling air outside. I tossed my olive-drab, dirt-grey and exhaust-black fatigue jacket on the ground and my skinny body on the flimsy cot. Sleep was instantaneous as there were no insects for a change.

The sudden explosion was both awful and very, very wrong. Awful in its ear-shattering, breathtaking proximity and wrong in that it was outside the carefully defined tactical arrangements. Yet, somehow, flames shot 30 feet into the sky from the mortar tracks just a few dozen meters away. The glow illuminated the team’s position against the surrounding wood line for the enemy — an unthinkable predicament. Explosion after explosion shook the three mortar tracks, one of which seemed covered with fire. Men screamed in agony. Exhaustion instantly became wide-eyed terror.

Dressed only in fatigue trousers and without boots, I clutched the ever-present .45 and ran toward the mortar vehicles. At the same time, I shouted to the RTO to radio for a casualty evacuation mission.

“Flange Control, Flange Control, this is Writer. At my last reported november delta papa I need an emergency dust off...,” began the calm, well-exercised voice directed at the bank of radios lining the relatively safe walls of the M577.

Oddly, I saw no muzzle flashes from the wood line. Nor were incoming rocket or artillery rounds exploding in the now brightly lighted fields inside and around the troop’s perimeter. If the NVA were not shelling the position — an improbable event given Team A’s frequent relocation — then the disaster must be self-inflicted. But how?

Speech was useless in the growing din as the nearest tracks were waved off the perimeter, away from immediate danger. Their drivers’ heads popped up through the forward hatches, eyes squinting in the unaccustomed glare. Smoke spouted from cold exhausts as the clumsy tracks pulled out. With care, the crews might not run over the confused infantry or the claymores. However, they almost certainly would run down many of the chain-link vehicular screens, designed to entangle incoming rocket-propelled grenades but requiring 20 irritating minutes to erect each evening.

The intensifying heat reached a few of the mortar rounds that crews had pre-

pared for the evening firing program and stacked near the tracks from which they would later be shot. The whistling sound of steel shrapnel added to the blasts of the projectiles exploding inside one of the mortar carriers and the hissing of the burning mortar charges.

From the darkness, a crewman ran skirting the flames, his eyes the merest of slits in the smoke, to the only mortar vehicle that appeared undamaged. He dove through the open rear ramp and, moments later, started the engine with a crankshaft-damaging roar. The track lurched off blindly into the night, the scalding heat preventing the driver from extending his head through the hatch to guide the vehicle and its nearly ignited load of fuel and ammunition. This singular act of heroism saved lives that night and would help to save more within 24 hours.

A quick glance up close at the two remaining mortar vehicles was sufficient to determine the cause of the tragedy. A defective round had exploded inside the mortar aboard one of the tracks as it was being fired, destroying the gun tube and igniting the basic load of fuel and ammunition.

“That tube looks like a damn tulip,” a voice muttered in the flickering orange light. “Jee-sus!”

Not half a minute had elapsed since the initial blast. Now, in the aftermath of the first paralyzing shock, more men began to react to the spreading danger. Many calmly led vehicles or helped their buddies away from the radiating heat of the burning diesel fuel and charges. Some of the wounded slowly dragged themselves farther from the flames, clutching bleeding and burned limbs. Two remained where they had been thrown, immobile and broken. A few men thrashed about a couple of meters from the disintegrating mortar track, alive but almost on fire.

Several of us crouched at the edge of the scorching heat, licking grimy, cracked lips, mesmerized by the flames near the writhing victims. Shrapnel screamed overhead. No one knew at what moment the fuel in the second mortar track might go up or whether the heat might reach a large group of prepped rounds, causing a second devastating explosion.

Certainly it was not patriotism nor any desire to win acclaim, but first one man and then another rose from his place of safety. Some clutched rags and towels to their faces as we, half naked, sprinted across the short stretch of smoldering grass, almost into the fire.

In the brightness where there was no breath lay the sergeant who had been in

charge of the night firing crew. He was a handsome African-American who had requested a transfer from the field a few days before. Denied: the only responsible reaction available to me. A ruthless toss of the dice had deposited most of us here, and reprieve was out of the question until the allotted time was served. The black sergeant had been too proud to take advantage of one of the many dishonorable routes out of the field.

I clumsily groped at him under his arm-pits, squinting through nearly closed and streaming eyes. It seemed almost easier to see through my glowing eyelids than to open them. I began to drag him back into the now shivering cold night. He felt weightless.

The sergeant opened his eyes and looked into my sweating upside-down face inches from his own as we struggled back through the dirt. "Why did this have to happen to me?" Quietly he whispered, bemused, over and over. "Why to me? Why?"

Ripping my eyes from his bleeding face, I scanned him for serious wounds in that second-nature style that so quickly became routine. There were no visible holes above the waist and his head, though swollen, was still together. Then further down. Oh God! There were no legs. Nor anything between the short stumps where his legs had once been. He died without a whimper as we hunkered down behind a pile of debris with some of the others. The fuel of the second mortar track became a momentary fireball a short time later.

The danger ended for the time being as there was nothing remaining in the immediate area to ignite or that was likely to explode. Those involved in the rescue seemed to have come out whole, more or less. We lay, the injured and the merely singed, tangled together for a few moments in a clump at the end of a converging network of drag marks. Then the medics arrived and each man rose silently to go or to be carried away.

At length, the fires receded and the dust-offs arrived, guided by the diminishing glow in the inky jungle. Our medics hustled the injured through the dirt storms created by the rotors of the hovering aircraft. Then, once again, we were alone. Six casualties, mostly from the mortar section, were evacuated. Only the calm handling of the armored vehicles prevented more. The poncho-covered dead and their recognizable parts were laid beside the shattered hulks of their tracks. For them, there was no haste.

We established a new night defensive position about 100 meters to the southwest in the same dry swamp bed. Like the transitory but real professionals that they were, the cavalry and infantrymen ignored slight injuries and marched away in the fading artificial light, lugging those pieces of gear that lay conveniently at hand. The following morning they would return to salvage all that could be recovered and destroy the remnants so that the enemy could not use them against us.

As the men slumped down to gain what slight rest the night still afforded, there may have been a flicker of envy for those who had been evacuated with readily mendable injuries. Except from their closest friends, there was little pity for the maimed and the dead. The reservoir of this emotion was at a low ebb perpetually in War Zone C.

What the ubiquitous North Vietnamese thought of the turmoil is unknown.

Dawn, 26 March 1970

A few hours later, at first light, I walked through the dry-season dust haze to the site of the tragedy. Soon, senior officers would begin arriving to receive reports on the disaster. It was imperative that the various staffs with some form of jurisdiction — the cavalry squadron and regiment, the infantry battalion and division and others — agreed on the basic facts. Incongruities would lead to questions and doubts. Accusations would follow. Ultimately, company grade officers would be held responsible for the disaster unless they, like their superiors, were agile enough to pass the blame along.

What had gone wrong last night? Had we made some terrible mistake? As I contemplated the shrouded bodies, no real answers came to me, only superficial explanations. "Yes sir, very bad luck indeed. About 0100 hours, a defective round during the evening firing program. Step over here, sir. Notice the splayed tube? Guttled the track and ignited the adjoining vehicle as well. The men responded superbly. The infantry, too. We had no injuries except those directly related to the original explosion of the round. A few citations are on the way. Right, sir. Thank you very much." Piece of cake.

But beyond the official explanations, straightforward though they would be, there was much more to ponder when lives were lost. Why, as the dying mortar section sergeant had asked me, did this have to happen? The men of Alpha Troop were competent, an evaluation supported by our well-maintained weapons and

vehicles, our tactical responsiveness, and our combat record. We rarely committed ignorant mistakes, a fact that our observant enemy surely had come to recognize. But if the real answer for last night's events was not human error, then it must, once again, merely be the randomness of war — our terrifying inability to predict the luck of the draw.

I remembered another day something like this one, a month before and at the opposite end of War Zone C. Late in the afternoon, the Sheridans, working behind three bulldozers equipped with massive steel blades, led us through a thick jungle where visibility was measured in feet. Suddenly, small arms fire erupted from the green wall on the right, splashing on steel gunshields like hail. More rounds immediately began to pour in from the front and left.

Automatically, the machine gunners ripped the oily towels from their weapons and began to blast into the leaves just inches from their muzzles. The lead tanks shouldered their way forward between the dozers, whose operators had abandoned them for the relative safety of the ground. Shotgun-like canister rounds from the tanks began to carve channels into the forest. Twenty-seven unmuffled engines jockeyed for position, their roaring and screeching merging with the painful, eardrum-piercing staccato of the machine guns. The detonations of the tank main guns at close range were nearly unendurable, yet reassuring.

We had slashed into a camouflaged bunker complex like a fist penetrating a nest of hornets. The first and third platoons came on line in the direction of the main complex to the right while the second platoon pushed in the opposite direction to clear a landing zone for the evacuation of the wounded and those yet to be hit. Alpha Company jumped off the decks of the vehicles and clustered at the rear of the armor. For the moment, the grunts could only search for snipers.

There is only one cavalry reaction to any but the most overwhelming ambush: assault. The armored vehicles bulled forward, squirming around trees and old bomb craters, spewing forth a furious stream of fire. Well-trained North Vietnamese regulars answered from fortified underground bunkers that we could not see until too late. Worse, the dreaded rocket-propelled grenades began to explode around us. When an RPG hit a vehicle and penetrated the thin armor, the effect was similar to a pipe bomb thrown into a bathroom. When there was no armor penetration or a detonation in the



A segment of the perimeter in a night defensive position. The vehicles are located in a dry swamp bed that during the rainy season would be unusable. The early evening coordination and maintenance chores are beginning.

trees, the grenade's shrapnel devastated everything within several cubic meters.

Our enemy — always the North Vietnamese regulars and never the less effective Viet Cong — held the tactical advantage in their protected underground positions. They had only to await the troop's advance in our tall, awkward vehicles over ground they knew well. It is true that we had overwhelming firepower, but they usually got the first shot at individual vehicles. Often, the tactical situation devolved into a series of isolated duels between a single bunker and a cavalry crew. Victory went to the side most willing to stand fast and slug it out.

The battle moved forward and we began to uncover bunkers that, almost always, were empty except for equipment abandoned by the NVA as they scurried away through tunnels and trenches. Our drivers steered to and fro over some bunkers, crushing their reinforced roofs, but it was primarily the infantry's task to deal with the revealed fortifications. Crawling about in darkened tunnels, expecting a grenade to roll around the next turn, was a job best left to the grunts.

A-66, the command ACAV, unexpectedly churned up two NVA soldiers from a partially destroyed bunker we had shot up and overpowered. The two lay stunned for the moment, sticking out of the earth a few feet to the rear of our track. I gestured wildly to Jim Armer, the A Company commander kneeling behind us.

"Take 'em alive!" I pointed to our interpreter, a converted NVA regular riding on a track nearby. "Interrogation."

Jim's radioman grabbed his shoulder and pointed him toward A-66. "OK," Jim mouthed back into the racket, nodding widely. "Chui hoi! Chui hoi!" he shouted, using the Vietnamese term for surrender,

as much to his own men as to the enemy. His grunts, already aiming their M-16s at the finally visible enemy, subdued the overwhelming urge to kill. The two NVA in their unfamiliar olive uniforms remained unharmed.

"Six" — my call-sign — "I'm hit! RPGs all over the place!" Bill Nash, the first platoon leader, located two vehicles to the left of A-66, was in big trouble. One RPG had already scored a glancing hit on the aluminum armor surrounding his engine compartment. Fortunately, the rocket missed the crew, but it left a deep network of scars to provide an aiming point for the next round.

The POWs were forgotten instantly. Nash's best chance was that the NVA grenadiers might be distracted by an unexpected attack. Perhaps he could pull back — if his engine still worked. Only the crew of A-66, having overheard Nash's plea on the command frequency, could react in time.

Instinctively, after the briefest of commands, our driver crashed directly into a thick curtain of bamboo several meters out front. As the vegetation flattened, all in one great wave, A-66 rode atop it, stranded and powerless to move farther. And there, squatting in a foxhole under a stunted thorn tree was an RPG grenadier. The point of his weapon was no more than four feet from the left side of our thin-skinned track. All that he need do to destroy us was press the trigger of the launcher resting upon his shoulder. The left machine gun could not be brought to bear despite the maniacal exertions of its gunner.

Yet, randomness prevailed once more. As A-66 accelerated forward, throwing all of us in the fighting compartment askew, I drew my pistol and struggled over to stand at the elbow of the left gunner. As the grenadier aimed his rocket

launcher, trying to decide whether to fire at such suicidally close range, I leaned over the side of our track and, staring directly into his face, squeezed the trigger of the .45. And again. The rounds slashed into his naked chest. His eyes rounded and his mouth opened, the scream lost in the pandemonium. The launcher fell to the ground. He crawled only a few feet.

Just then, an exploding hand grenade threw fragments and dirt directly against the rear of A-66, and rifle fire began to ricochet from our steel fittings and pit the aluminum plate. A sudden firefight had developed between the grunts following us and the NVA inside the partly crushed but still defiant bunker we had left in our rear. Perhaps A-66 had collapsed the escape tunnel leading from the bunker and the North Vietnamese had returned to fight it out.

The grunts snaked their way up, finished off our two intelligence sources without hesitation and rolled grenades into the apertures of the buried fortification. Sub-surface blasts lifted inches into the air the infantry lying on their stomachs nearest the bunker. Other grunts trotted up to our rear ramp and began to pepper the brush forward of A-66, while the nearest vehicles lumbered ahead and arranged themselves on our flanks. Nash and his scarred track bounced back, as if expelled from the grasping wall of vegetation.

Very soon, almost abruptly, the enemy fire died out and the field was ours.

After the battle, a crewman examined the captured RPG launcher. Later, he casually remarked that the firing pin had pitted the percussion device but failed to ignite the rocket. None dared ask whether he was serious. Randomness: A faulty rocket, the hand grenade that missed A-66, a defective mortar round last night. Was it all so capricious?

There was no answer to this question, no reassurance, only each man's very private accommodation to the cruel facts of survival. For some, apathy. For others, escape into drugs or resistance to the system. But for most of the survivors in Alpha Troop, the response was a quiet, abiding sense of confidence in them-



At left, an Alpha Troop platoon in a tight daytime defensive position, while on patrol in War Zone C. Above, the result of enemy fire that ignited the basic load of fuel and ammo on a Sheridan tank.

selves and their fellow crewmen. Together with a driving need to strive against the luck of the draw.

My memory of that battle a month earlier ended abruptly when a radio telephone operator shouted from the edge of the new perimeter 100 meters away. "Hey, Six! Headquarters on the horn. They're on the way."

Walking through the sluggishly stirring encampment, I decided that it would be a good idea to plan a quiet day and give the men a break. As March is the height of the dry season, the best time of the year for operations, we could make up the lost day later. Maybe just a light recon for now.

How very wrong I was. Again.

1200 Hours, 26 March 1970

The official processions had come and gone without much comment. Lieutenant Colonel Conrad, the thin, sunburned commander of the 2nd of the 8th, was the most understanding, as expected. Jim Armer and I sent the cavalry platoons out at mid-morning on simple close-in missions designed to allow the platoon leaders maximum flexibility in not noticing that their crews and the attached infantry were napping. The three combined-arms platoons were aimed in separate directions with instructions to lightly search areas that we knew were devoid of recent enemy activity.

After their departure, however, ugly things began to happen. The sounds of a serious battle erupted nearby, and each of us knew at once that someone was in trouble. The men of the first and third platoons could hear only the flat report of the 500-pound bombs, perhaps five kilometers away. But the cavalry and infantrymen of the second, most northerly platoon could distinguish M-16 rifle fire from the shriller tone of the enemy's AK-47s. The unit engaged, we soon learned,

was Charlie Company, from the same battalion as Jim Armer's Alpha Company. Worse, Charlie Company had ridden with us and made friends for weeks until the time of Alpha Company's assignment to Team A.

During the mid-morning hours, M-16 rifle fire dominated the contact. But as noon approached, it became clear to 1LT Mike Healey and his second platoon of cavalry that the North Vietnamese had gained the advantage. After 1100 hours, each pause in the American firing and aerial bombardment was shattered by enemy weapons, apparently well supplied.

Our monitoring of local radio traffic revealed that Charlie Company was up against a reinforced battalion of the elite 272nd North Vietnamese Regiment. The enemy troops seemed to be leaving their protected bunkers and encircling the grunts as responses from the Americans became weaker. There were hard-to-believe reports of North Vietnamese firing on low-flying American choppers from the upper branches of trees.

The constellation of helicopters overhead had acknowledged appeals for ground assistance from the infantry company commander, CPT George Hobson, but the requests were, so far, unfulfilled. Pinned down and vastly outnumbered, the Americans could not break out to a landing zone even if there had been a cleared area nearby. Neither, due to the lack of adjacent LZs, could infantry reinforcements move in to provide relief in time. Charlie Company's ammunition was already low and declining, and the NVA were so close that chopper kick-outs would resupply the wrong guys. Fixed-wing air strikes and helicopter gunships only delayed the inevitable.

"Writer Six, this is Writer Two-Six." Two-Six, Mike Healey, was the most experienced lieutenant in the unit following the recent transfer of 1LT Nash.

"What's going on now?" I stepped into the M577 and took the hand mike from Seege, the chief radio telephone operator. He sauntered out to open a couple of cokes for us.

"Two-Six, this is Six," I responded. "The grunts are still taking a pasting to the north, at the stream junction. They've got plenty of casualties now and can't move out. It looks bad."

"This is Two-Six, roger. Has Flange Two-Nine" — LTC Conrad's radio call sign — "said anything about us?"

"Nope. We'll probably contact him soon. What are you doing?" I could picture Mike, bony and almost delicate in appearance, lounging atop his ACAV behind the track commander's cupola, relaying comments to his crew and platoon. In a land without television, gossip and speculation were the common forms of entertainment, and nothing was quite as interesting as someone else's firefight.

"This is Two-Six. My current location, from Charlie papa Kentucky, down one point two, left zero point nine. The grunts're cloverleafing and we've got a couple of bunkers, nothing fresh. I'm still paralleling that old trail to the north. Over." Mike was near to but not on the enemy trail. The troop never moved over previously used ground that could have been mined or strewn with booby traps.

"Six, roger, out. One-Six and Three-Six" — the call signs of the other two A Troop platoons — "did you monitor?"

"This is One-Six, affirmative. Same location as my last. Grunts are still checking the area out. No sign of any dinks here." The acting first platoon leader was Platoon Sergeant Willie McNew, a veteran of more than 20 years. Willie, perpetually pink and balding, did not belong in the field at his age, but the troop leadership was depleted, and there was no alternative. He was an NCO of the old school, respectful of immature officers'

clumsy attempts to exercise authority, always helpful.

“Ahh, Six, this is Three-Six, ah, wait a minute.” Long pause. “OK, I’m located from check point Nevada up one point four, right one point two. Over?” 1LT Bob Henderson of the third platoon was a newby and, except for a brief action about a week before, had never seen a firefight. Ideally, Bob should have been combined with Willie so that he could not endanger himself and his platoon while he learned. Perhaps he might pick up a few things before...

“Six, out.”

Inside the M577, the temperature was a humid 100 degrees or more, and the tiny, erratic fan did little to alleviate the discomfort. Most of us at the command post would have preferred to be out with the platoons where it was cooler and less monotonous under the jungle canopy. That was especially true today, when the mission involved minimal danger. Out there, the principal concern would be falling trees and branches, which produced only a couple of minor injuries each week.

Our war was an exercise in boredom, relieved by abrupt intervals of terror and pain. Only time-consuming attention to detail and competently applied experience minimized the costs of combat. Under conditions as unpleasant as these, it would have been reasonable to expect soldiers to seize any pretext to leave the field. In Vietnam, many pretexts were available.

We usually sent a troublemaker or someone with a real or imagined psychological disability back to headquarters. Hard drugs and grass, although uncommon in my experience with the 1st Squadron, could be purchased everywhere in the rear areas and were a constant temptation. Failure to take the troublesome anti-malaria pills or the consumption of unchlorinated drinking water often produced illnesses that required treatment at a field hospital. And in most troops, when a vehicle malfunctioned through negligence or exhaustion, the practice was to send some or all of the crew from the field during its repair.

Thus, those who desired could get out if they were willing to pay the usually moderate price. Yet few did. The men thrashing through the jungle that day had freely elected to remain at their assigned stations. They chose to “do their jobs,” as it was phrased, without using drugs in the field or taking their anger out on civilians — on the rare occasions that they saw any.

Grabbing my coke, hot by now, from Seege, I walked down the M577’s ramp and slumped into a canvas chair in the tent extension attached to the vehicle’s rear. The tent cover was invaluable in the miserable five-month rainy season. Its value in the equally miserable seven-month dry season was questionable. A couple of field mechanics and mortar crewmen stood around outside, trying to decide whether a delicious meal of C rations and dust was worth the effort.

“Flange Two-Nine, this is Racer Two-Nine.” George Hobson came up on the battalion net again. I’m getting down toward the last of my smoke grenades and a few magazines per man. Over.”

“This is Flange Two-Nine, roger. We’ve got some more air for you now, so get ready to mark your position.” Flange Two-Nine, LTC Conrad, sounded reassuring as he continued to do all he could, but those grouped around the radios in the M577 had listened to the traffic on the command frequencies for much of the morning. Charlie Company had about eight hours left until darkness. Charlie Company had about eight hours left.

Racer Two-Nine’s voice, cracking under the strain of a four-hour firefight against severe odds, betrayed the despondency of a man who had exhausted his limited options and was merely awaiting the final outcome to be thrust upon him. Lying on his back with a painful face wound amid the bullet and shrapnel-scarred trees, George stared into the unclouded sky at the aircraft circling symmetrically overhead. He could read a map and he now knew the size of the enemy force. It had to be clear to him that he faced the North Vietnamese, not the Viet Cong, and that they would not run away from the bombs and the gunships.

“Well, what are we going to do? It’s about four and a half clicks, maybe five from us to George.” Jim Armer laid his plastic-coated sectional map on a five-gallon water can next to his chair in the tent extension and smiled. We were now face to face with the subject that had brought our never robust pace of conversation to a near standstill for the past hour. Except for the busy radios, there was silence under the canvas. Outside, an engine fired up, probably to heat a few cans of C rations.

“Four hours for the whole trip, maybe more,” our new and still overweight First Sergeant ventured. The shrinkage of waistlines was directly proportional to the number of weeks in the jungle. “The busting looks pretty bad, but at least there

aren’t any big streams between Charlie Company and us. It’ll mean a night operation coming back and the men are just about shot after last night.”

The sergeant in charge of the landmine-damaged ACAV marooned inside our perimeter, with many more months in country than our First Sergeant, was obviously preparing to unburden himself. At least our small part of South Vietnam was free, admission to the M577 was not restricted and everyone was entitled to an opinion. “There’s a good chance of an ambush on the way with all them dinks around here. Do you want to volunteer, sir?” He spat as he laid down the challenge.

“No.” Jim recoiled from the TC’s question, which had but one sensible response in Vietnam. “But if I was with those guys, I’d sure want somebody to get me out.” Since his men rode where we drove, Jim’s planning inputs tended to be suggestive rather than determinative. The company commander of our infantry detachment sat patiently next to his map, a sturdy young man in a sweaty olive undershirt, glasses and slowly corroding steel dog tags.

I worked through the logic yet again. It was unlikely that the infantry-oriented senior officers overhead imagined that Alpha Troop could traverse the impossible forest terrain to Charlie Company in time to be effective. On the other hand, someone in the command structure might decide later in the afternoon that it was necessary to try, resulting in an unduly perilous night mission for the troop. And, of course, the resourceful LTC Conrad might have a last-ditch plan that employed Team A reasonably. But would it not be best to stand up right now and carry out this unsought task our way?

The rawest newby sitting around listening to the intermittent conversation could tell that to be involved at all probably would cost lives, perhaps his own. It was not entirely paranoid to suspect that the NVA considered the troublesome Team A to be the real objective and was setting us up. Still, there were almost 100 Americans trapped and already dying up there. The sweat ran freely.

After some moments, the right answer, the only answer, could no longer be avoided. “Seege,” I sighed.

“Sir?” The Chief RTO sat as if he expected to be slapped but was resigned to the blow.

“Call Flange Control and tell Conrad that Team A is prepared to react.”



“Roger. What else?” There had to be more, of course. It was never so straightforward.

“Tell One-Six and Three-Six to pick up their grunts and move back here ASAP. Two-Six is to continue busting a trail north. Don’t say north, just tell him to continue as rapidly as possible in his current direction after picking up his people.” Mike would know we were joining him when we arrived, and we did not need to inform the North Vietnamese monitoring our frequencies. The men under the canvas, their tension now dispelled by the immediacy of action, scattered into the sun to prepare their vehicles and collect their gear. Team A would start upon its mission before LTC Conrad ordered us to move. Jim smiled for the last time that day, relishing our macabre little game of military one-upmanship.

1330 Hours, 26 March 1970

Within 15 minutes, the first and third platoons had returned to the night defensive position and had married up with the command section, consisting of A-66 and the medic and artillery forward observers’ ACAVs. As soon as the expected instructions arrived from a preoccupied LTC Conrad, we were on the move north to join the still-rolling second platoon. At the night defensive position, only the M577 with Seege’s radiomen, the de-

pleted mortar section, the recovery vehicle, and one disabled track remained. We left two squads of infantry for their protection, but we took the crewmen from the inoperative ACAV to fill vacancies in their platoon. Thus, the first big risk of the mission was a dangerously thin night defensive position that hadn’t been moved in two days. No choice.

Closing on the second platoon, the troop quickly reorganized into jungle reconnaissance array and pushed toward the encircled Charlie Company. Each cavalry troop had its own set of formations designed to deal with particular tactical situations. In thick brush and forest, we reconned in three columns. The left and right columns each consisted of one platoon with the platoon leader’s ACAV immediately behind his lead tank and the balance of the unit following at five-meter intervals. The last platoon squared off the rear of the formation and was usually deployed as the maneuver element in small engagements. The center column contained the troop headquarters, led by a Sheridan tank from one of the line platoons with A-66 second. Positioning the troop and platoon command tracks so far forward was illogical but unavoidable because the American soldier is willing to be led but is reluctant to be directed.

As we snaked through the multi-canopied jungle, more than 200 cavalry

and infantrymen perched atop 27 metal boxes, each man keenly aware of the inevitability of battle and of the possibility that an ambush could erupt at any moment. For these men, unlike their horse cavalry antecedents, there was no heart-pounding charge across an open field in an all-or-nothing gamble. In Vietnam, victory went not to the bold but to those who best withstood the tension and committed the fewest mistakes. We were opposed by masters in the art of patience, whom we had to seek out on their terms and on their own ground. Every advantage of temperament and terrain was theirs.

Among American soldiers, the crew of A-66 was fairly typical. Topper, the left machine gunner, had an open, trusting face and a thick shock of hair barely concealed under his helmet. He was a fairly recent replacement and too green to brood over dangers that he could visualize only dimly. His buddy on the right M-60, also being broken in, was similarly naive. Both would soon be more wary.

On the other hand, our driver, Marty, was well seasoned but so steady under fire that it was clear to me he did not fully appreciate the seriousness of his situation. During one battle, he had been observed reading an issue of the limp pornography included in the publications shipped to the troops in the field. He seemed undis-



tracted by the heavy caliber .50 machine gun pumping away just over his head and the M-60 working over his left shoulder. About one inch of aluminum plate separated him from incoming frontal fire, and a layer of sandbags below his seat provided some protection from landmines.

Sergeant Dennis Jaybusch, the track commander, was a tall, gangly fellow with a light blond mustache and all the grace of an adolescent giraffe. When handling the radio, his soft, conscientious voice reliably backed me up on the invisible network that was our sole lifeline to the world. However, it was becoming obvious that Dennis was just about through. He'd been exposed in his cupola behind the caliber .50 for too long and now merely plodded through the remaining few weeks before his rotation date.

Peering intently into the thick underbrush, the closely packed infantry and armored crewmen on A-66 and the other tracks attempted to spot the camouflaged enemy before they heard the incoming. The lead tanks, always working with a 152-millimeter canister round in the chamber in hopes of an early shot, squirmed around large trees and smashed smaller ones as the underbrush flattened into a path. The loaders on the jungle-busting Sheridans had the difficult and dangerous assignment of riding outside on the rear decks to brush fallen branches

and debris away from the engine air intakes.

Each vehicle followed in the path of its predecessor to avoid detonating randomly placed mines. Sweat soaked into bulky flak jackets and caused ink to run on forgotten letters in dirty pockets. The humidity was so high under the foliage that it was almost possible to watch rust form on the well-oiled machine guns.

For the first hour, the troop made exceptionally good progress, covering perhaps 100 meters of the dense forest every five minutes. At this rate, however, the lead Sheridans overheated, their power plants too light for the brutal work of busting jungle. We rotated the leads every 30 minutes as the retiring tank crews pulled over to the side of the route, swung their turrets off center and removed radiator caps. Careful handling prevented anyone from being scalded by the resulting geysers of steam.

Crashing forward, we wrenched a path from the unwilling jungle with about as much stealth as a parade down Main Street. But not a single vehicle threw a track from the road wheels despite the logs, stumps, and eroding bomb craters that we traversed. Not one engine, drive, or mechanical system malfunctioned from misuse or poor maintenance. Had a single vehicle gone down, an infantry

platoon would have had to remain with it until the repair was completed or the vehicle was dragged back to the night defensive position. In a jungle where enemy battalions roamed about, this was an unthinkable risk.

As the troop progressed, the gravity of the mission penetrated deeply into the consciousness of those crewmen who had not gathered around the M577's radios during the morning. Within the first hour of the march, as details spread among the last to be informed, gunners loosened the protective towels around the operating mechanisms of their weapons. Crews removed a few of the more accessible ammunition cans from stowage on the floors of the ACAVs and spaced them about on upper decks, mainly to place them within easy reach but also in a very human attempt to pile bulk between the crew and incoming fire.

Crews took extra machine guns from internal racks and placed them in convenient positions atop the ACAVs: No M-60 gunner was ever seen trying to replace an overheated barrel or damaged firing mechanism during a firefight. Men passed around pistols and rifles, even though no one favored hand weapons over the heavy machine guns. In battle, there is a perverse satisfaction in the feel and sound of the large automatic weapons. It is almost as if the enemy can be frightened away by the noise alone. Almost.

Over the radio, George again reported that his ammunition and pyrotechnics were nearly exhausted. When the last of Charlie Company's smoke grenades was expended, the forward air controller overhead would have to place air strikes from memory in the failing light. The artillery would be directed by LTC Conrad or his S3, MAJ Charles Blanchard, in the same risky manner. At that point, the danger to the infantry increased astronomically, but the alternative was a stand-up ground assault by the unharried enemy. With compasses and melting

grease pencils, the more experienced of the platoon leaders and I bent over our map cases. Jim Armer talked nonstop on his PRC-25 on the rolling rear deck of A-66. The hours passed.

Driving hard, A-18 in the rear of the first platoon column began to pour more than its usual volume of smoke from the engine compartment. This was our tiredest Sheridan and the overheated insulation appeared to be burning from its wiring harness. The tank's crew kept it plugging along through the unorthodox, yet seemingly effective, technique of dumping five-gallon cans of water directly into the engine compartment. A-18 finally got an opportunity to cool off when we penetrated an old B-52 bomb strike area and the drivers slowed down to thread a path through the closely spaced craters.

"Writer Two-Nine, this is Racer Two-Nine, I've saved one smoke. We'll pop it when we've got you in sight." For the first moment since the early morning, George's voice echoed a tentative note of hope. The sounds of Team A's splintering trees and racing engines must have penetrated the remaining distance to his position — and to the North Vietnamese lines as well.

"This is Writer Two-Nine, roger, out." No reason to disguise our intentions now.

"Flange Two-Nine, this is Writer Two-Nine. I'm putting out smoke on my point. Can you give me a spot relative to Racer?" The exact angle of our approach was critical as we had to arrive at Charlie Company's southeast flank, the vicinity of lightest reported contact. But, even if our navigation had created no tactical problems, the NVA commander might attempt to generate one for us by inserting a few squads between the American units during the approach. A spontaneous firefight could result in the lead tanks wiping out the exposed Charlie Company as well as the NVA.

"This is Flange Two-Nine, roger, wait. I'll come around and take a look." LTC Conrad's tone against the background of whirling helicopter rotors expressed no satisfaction, as was entirely appropriate, with Team A's timely arrival.

"This is Flange Two-Nine, identify green. Make a half turn to your left, Writer, and come around to a heading of three-one-zero. You've got about 200 meters to go. I'll put a little air on in the next few minutes."

"Thanks, Two-Nine. Out." Now, for the three platoons. "One-Six, Two-Six, Three-Six, this is Six. Elevate all weapons until we find the grunts. Nothing

heavier than an M-16. Do not fire directly forward under any circumstances. That's where the grunts are. Acknowledge!" If a trap had been prepared it would be sprung now, when we might be entering a minefield surrounding the enemy base. One of our most fundamental strengths, maneuver, was restricted and our flanks exposed as the drivers cautiously picked a path through the craters marking another chewed-up B-52 strike area.

The officers stowed their maps and compasses and everyone cinched their flak jackets tighter. Crews crouched behind steel gunshields, fingering the trigger guards of their puny-feeling rifles. The infantry lay as flat as their bulky equipment allowed on the exposed rear decks of the ACAVs, eager to jump overboard and bury themselves in the inviting bomb craters at the first shot.

Tension transformed into noticeable anxiety. Eyes refused to remain fixed for more than a moment. Anyone with even the most trivial task immersed himself in it. Hands not clutching a weapon were busy at nothing. Soft drinks appeared from the intestines of the tracks and were poured lukewarm down tightened throats. Quickly emptied cans bounced over the side, marking, as always, our progress across the face of South Vietnam.

Yet incomprehensively, there was no fire from the brush rimming the far side of the bombed-out area. Had the air strikes masked our arrival? Had the NVA radio operator who was assigned to monitor our traffic been injured or misunderstood our intention? Was the ambush in the wrong place or had the NVA commander simply made a mistake? Randomness, again.

Suddenly a spluttering smoke grenade arced out of a clump of brush ahead. "Racer Two-Nine, this is Writer, identify yellow."

"Racer Two-Nine, affirmative, affirmative!" George was elated.

Reentering the sheltering vegetation on the far side of the forgotten air strike, the lead moved only a few meters before Three-Six came up on the horn. "Ah, Six, looks like we've got some of our guys out front here. They're beat up all right."

The men of Charlie Company huddled apathetically behind scarred trees and in depressions scooped out under the brush. Few stood as the troop crashed through their position, forcing our drivers to move carefully to avoid running over survivors. The dead were a group of partly covered forms in the midst of a larger pool of wounded grunts.

Breaking from the reconnaissance formation, the medic track pulled up to the shore of the casualty collection area. After jockeying around to point their frontal armor toward the enemy, the medics dropped the rear ramp into the stained brush. Spec. Four Felthager and his two assistants went to work, using the medical supplies in their ACAV to supplement the meager resources of Charlie Company. Urgent wounds had to be handled immediately because there would be more from Team A soon.

Jim and I unhooked ourselves from our communications gear and jumped the six feet to the ground as George dragged himself over to A-66. While the troop was waved past the infantry command post in three columns, George briefed us from behind his lopsided face.

"Very strong, at least a battalion here. Lots of RPGs. Very well-controlled. Sure glad to see you guys," he said between bloated lips. His bandoleers and harness hung down empty of ammunition and grenades. "The main part of the complex is just north of my position here. But it's in a semicircle shape, and we walked right into the hollow part this morning. Never had a chance. Head-on and flank fire is bad, especially from the west. Lightest where you came in. Only about half the company is still effective. Whatever you do," he squinted at the lines of armor and infantry moving through as his walking wounded straggled in, "don't waste too much time on the dinks. My guys need help bad."

At this late hour, saddled with the Charlie Company injured, we could follow only one course of action: an assault directly into the center of the enemy bunker complex. There was no daylight remaining for a careful probe around the exterior of the enemy configuration for the weak element. No time to execute an attack on more than one axis and, without our sister units from the 1st Squadron, no opportunity to envelop the NVA battalion and eradicate it entirely. Just a brutal, unoriginal shot straight ahead, which the enemy commander would expect. And we probably were outnumbered two to one.

If the North Vietnamese were subdued quickly, I intended to release one of the platoons to bust a landing zone nearby and evacuate the wounded. Were this to be accomplished, LTC Conrad probably would use the same LZ to insert a couple of infantry companies with instructions to try to surround the enemy position, thereby leading to an all-night action. Speed was essential.

1630 Hours, 26 March 1970

Behind the hundreds of tons of metal, ammunition, fuel, and flesh that was the troop assault line, the spent men of Charlie Company slumped down to secure the casualty collection point. Alpha Company gladly dismounted to assume its customary position behind the tracks. The grunts and the tightly spaced vehicles faced north toward the Cambodian border a few kilometers ahead. The well-led first platoon occupied the dangerous left flank facing the greatest concentration of enemy activity. The less experienced third platoon leader held the center of the line with A-66 in close proximity to his right. The second platoon extended eastward through the least threatening terrain all the way to the bomb strike zone. A-18, now unquenchably smoking, was abandoned in the rear of the first platoon, a crippling loss.

Blue max gunships ineffectually expended their loads on east to west sweeps just forward of the troop line as we prepared for the battle about to be joined. The principal value of the tactical air was to distract the NVA and to keep their heads down within the bunkers. Only rarely did the helicopter ordinance destroy the carefully constructed underground fortifications. Occasionally, when rockets detonated in the trees, they caused friendly casualties.

Up and down the line sounded the sharp clatter of men jacking back their caliber .50s and rearranging ammunition cans. Here and there, a final soft drink passed around and the container, as usual, wound up overboard. The grunts dropped their excess equipment into the weeds, scattered out while adjusting their bulging ammunition bandoleers and, pockets stuffed with grenades, waited silently.

All was still.

“Commence Fire!”

Twenty-five caliber .50 machine guns, 40 M-60s and five main tank guns blasted into action. The vegetation began to disintegrate and a few nearby bunkers became visible. The more skilled gunners began to work their rounds from two or three feet in front of the forward slope of their tracks out to almost horizontal deflection and then back in close. From bitter experience, they knew the fatal damage that could be done by an enemy rifleman lying in a concealed hole only a few feet away. The sharp rattle of the automatic weapons felt like ice picks on our eardrums and the concussions from the tanks' main guns a few feet away threatened to tear the smoky skin from our faces.

After bolstering our courage through the full demonstration of the troop's firepower, we began our advance. Twenty-five tracks in a long single line pressed forward into the unknown, firing at will into a jungle that yielded its secrets so grudgingly. After the first ten meters, the volume of fire picked up again. Excessively. The gunners were expending too high a share of their basic load in the early stages of the fight. A disastrous shortage of ammunition inevitably would ensue!

“Cease fire! Cease fire, let's see what's going on,” I radioed urgently. “Acknowledge!” The hallmark of a disciplined unit is its fire control, and we usually had been able to stop shooting within a few moments of the command. Today, however, nervousness must have been especially widespread as the rate of fire slackened only slightly. After perhaps five seconds, without warning, a long burst of AK-47 fire walked up the tank turret of A-27 and glanced off its gunshield.

The line re-erupted into a wall of flame and smoke. It was now obvious that the troop's rate of fire reduction had been paced by a corresponding increase in incoming. Staff Sergeant Pasquel “Gus” Gutierrez, the track commander of A-27, knew that crouching down for protection from the enemy fire would increase the likelihood that more would follow. Instead, he grabbed the TC's override and violently traversed his turret to the left. As soon as he judged the gun tube to be more or less correctly oriented, he let loose with the main gun and cleared a considerable swath of jungle. While his loader slammed another round into the breech and 27's gunner fired an M-16 from the left hatch, Gus lobbed grenades out front. Swinging around to the right, he blew away more brush, clearing a bunker roof near A-66.

“One-Six, Two-Six, Three-Six, casualty reports, over!” Short delay.

The radio hummed as the first platoon leader shoved the transmission switch on his CVC helmet forward. “I've got two hurt on one-two. They're on their way over to the medics. The grunts're carrying 'em.” McNew was already taking a beating on the left. Another static punctuated delay.

“This is Two-Six, only one man lightly hurt.” Gutierrez had performed. Long delay.

“Three-Six. Seems to be two hurt for sure and, I believe, one KIA.”

On and on, a meter at a time, the platoon leaders urged their men forward, always

struggling to remain as nearly on line as possible so as to afford all vehicles an unrestricted field of fire. Rolling over logs and around craters and trees, we advanced another five, ten, twenty meters. But, recognizing the increasing momentum of the attack, the NVA fought back with courage and determination. The RPGs began to hit with telling force on vehicles and in the trees.

In order to aim, however, the enemy soldiers had to expose at least their heads and shoulders, and we exacted our price. Nonetheless, by 1800, with about an hour of full daylight remaining, the situation had become grim. We had made too little forward progress through the thick jungle to consider establishing a night defensive position and clearing an LZ. The Charlie Company casualties were still suffering, and the medics reported that we had incurred many new ones. The race to darkness continued with little time remaining to break the numerous, entrenched enemy or to begin the journey home.

“Six, this is One-Six. I'm taking heavy fire from the left! What do you want me to do?” McNew was excited, a rare event.

“This is Six. Orient your outside ACAV to the left. Keep stringing them out as we move up. Let me know when you're down to your last track. Over.”

“Wilco. That won't be very long! Out.” Willie's report meant that we were flanked on the left and, although the echelon formation he was assuming should protect him in the short run, the distance that the troop could advance was now mathematically fixed. The hornet's nest had begun to close about our wrist as our fist thrust towards its center.

“Writer, this is Racer Two-Nine. By the way, we've had dinks behind us for some time. Don't stop, we can hold.” The NVA commander had apparently launched a counter stroke aimed at the casualty collection point, our weakest link. Even if George could hold them back — and he must or we would have to break off our attack — the trap was closed and we were surrounded.

Jim Armer picked his way through the tangled undergrowth to A-66 on line. As he clumsily stumbled forward, encumbered by his bulging ammunition pouches and assorted grenades, canteens, pistol and first aid kit, he didn't exactly resemble John Wayne on the silver screen. Severed by a stray rifle round, a branch dropped from the trees overhead and settled gracefully near him as he clambered onto the rear of our track.

“The RPGs are playing hell with us! I've got eight hurt now,” he shouted di-

rectly into my ear under the CVC helmet. "I'm moving up tighter behind the tracks." His face had miniature channels on each side of his nose where the sweat had worked away at the grime on the way to his chin. Like everyone else, his eyes were pink from the choking smoke and the exhausts.

"OK. How's it look?" I shouted back at him as he stood on one of the fender projections extending from the rear of the ACAV.

"No sweat" — the all purpose response. What an incongruity, I thought, as I admired his aplomb. "Most of their stuff is high now. We're hurting 'em bad." Jim lowered himself carefully to the ground and waddled back toward his men to reposition them and to direct their fire.

Meter by meter, the advance continued. Some of the weapons in the vehicles were silent now, their gunners dragged away through the brush and debris to the toiling medics. Occasionally, one of the infantrymen crawled up through the clutter of the battlefield to an ACAV and manned an idle machine gun, an heroic act for an untrained grunt.

Fifty meters now, and as the all-too-few minutes until darkness melted away, the enemy fire showed no sign of slackening. The NVA were proving to be just as efficient as we in recycling patched-up but still functional soldiers to replace the newly wounded on the line. Or else, unlike us, the enemy commander controlled tactically unlimited reserves that he could throw into the fire-storm.

Our gunners on A-66 seemed to take their first large-scale firefight in stride, especially Topper, who bent over his M-60 and fired skillfully into the more suspicious of the surrounding brush. Not yet 20 years old, he was, by now, almost certainly a killer of men. We had consumed most of the upper layer of the two levels of ammunition carefully arranged on the floor of A-66, and our path was littered with empty olive ammo cans and brass cartridge cases. One M-60 had been replaced, and Dennis had expended a pint of lubricating oil, pouring it directly on the almost glowing caliber .50 barrel. His adam's apple worked up and down furiously as he screamed for another can of .50 to be passed up. Gunners, even mature track commanders like Dennis, and especially those approaching their rotation date, rarely felt secure unless the thumb-activated trigger was depressed.

Inevitably, some leaders were more forceful than others. On this courageous day, whenever there was a momentary lag in the advance, Sergeant First Class

Robert Foreman thrust his Sheridan tank forward. Each time his platoon loyally followed. Again and again, SFC Foreman, our most senior African-American NCO, led the way when it seemed that further progress was blocked. Each effort required that his crew expose the thinner side armor of their tank to head-on fire. And then defend their exposed position until the lighter tracks, including A-66 on his immediate right, could pick routes forward to cover his flanks.

Regardless of the exertions of Foreman and others, however, it was becoming obvious that there were just too many North Vietnamese and not enough of us. I reached for the radio frequency control-box lying loose just behind the caliber .50 cupola and switched over to the battalion command net to discuss a situation which was now almost hopeless and growing costly beyond reason. Just as my mouth opened, a sense-destroying explosion enveloped me and I was hurled unconscious to the ammo and weapon strewn floor of the ACAV.

Utter blackness, deep and comforting. Sometime later, shades of grey and hazy images but no sound beyond the ever-present ringing of my ears. How long I lay there I don't know, but at last and very grudgingly, I began to function at some threshold level of awareness.

My first incoherent thought was that SFC Foreman, just to our left, had traversed his turret too far and blown us away. Nonsense. Then my eyes began to focus and I saw a pile of expended cartridge cases where my nose ended on the ACAV's floor. With a bit more reluctant concentration, Topper's fatigue sleeve came into range where it peeled away from his crimson arm. Straining to rotate my eyes, I slowly brought into focus the right gunner, peering out from his lacerated face.

I apprehensively flexed each limb of my body in sequence, much like switching on lights room by room. All of me turned on except for my left forearm. This seemed more than reasonable since my hand was a mess. My neck throbbed like a bass drum when I attempted to turn it, and blood dripped on my flak jacket from somewhere. Dennis was nowhere to be seen.

Struggling to stand, Topper began to yell, not particularly noisily but with conviction. He hoisted himself out of the fighting compartment onto the rear deck, rolled over and fell into the brush with a thud. Holding his dangling arm to his side, he ran in a limping but resolute manner toward the medics.

The right gunner rallied, grasped his M-60 and began to fire furiously, although it was unlikely that he could see much from behind his sliced up face. After a few rounds, he shot away one of the radio aerials, shrugged and followed Topper to the rear. Dennis was still among the missing. The invincible A-66 was, like me, a helpless spectator.

Smoke curling out of the turret and a scarred gunshield on SFC Foreman's Sheridan explained our helpless condition. An RPG had landed squarely in the center of his machine gun's shield, punching a hole through it and exploding his upper body. A very brave man, operating in a racially ambivalent time and place, had repeatedly risked his life on our behalf and, finally, had lost.

The rocket that had disintegrated Foreman and immobilized A-66 also had knocked out the ACAV on his far side and had sprayed shrapnel among the grunts nearby. With three tracks and the adjacent infantry silent, the center of the line was in grave jeopardy. Soon the alert enemy would pour fire through the gaping hole created by the unfortunate rocket. The incoming would fall not only upon our vehicles, but upon the unprotected infantry, the injured Charlie Company and the casualty collection point directly behind us.

These images drifted listlessly through my mind to merge with some immensely distant recollection of duty and personal obligation to the men. There was no seasoned second-in-command among the cavalry platoon leaders who would be able to handle three company-sized units in a desperate battle. The two infantry captains on the field knew little about armor, and the senior officers circling overhead could do nothing for us on the ground.

Senselessly ignoring the still functional M-60s, I stood up to full height near the left gunshield, groggily drew my dependable .45 and aimed the ineffectual pistol at the area from which the RPG had come. I squeezed off one round into the green fog, and then another and another. The shots filled the dead space, their effect unknown. Yet, for the moment, no more rockets shattered the pistol punctuated silence. The magazine emptied. I stood, awaiting the inevitable.

Jim Armer, comprehending our desperate situation, unexpectedly ran from his position in the underbrush to Sergeant Foreman's tank. He struggled onto its rear deck and leaned over the turret, grasped the bloody caliber .50 machine gun handles and began hosing down the

jungle. Jim had fired only a few rounds when Dennis' head bobbed up unsteadily within his cupola. He blinked his bulging eyes, pointed to his neck and asked wordlessly in the reviving din what was wrong. With blood leaking from the back of his neck he didn't look too fit, but my dreamy smile reassured him and he leaned into the .50. Now two machine guns clattered.

Jim soon ran out of ammunition in the tray or jammed his weapon. Knowing how to solve neither problem, he fired several magazines from his rifle and then jumped down from the tank. He probably moved some of his grunts up to replace the newly wounded and reestablish a base of friendly fire in the center of the line. By this time Dennis and I, mostly by instinct, had the guns in our track going and the ACAV on the other side of Foreman's Sheridan got back in the fight. A-66's bandaged gunners returned a little later and relieved us of our frantic, three armed exertions. Gutierrez cleared the area in contention with his main gun.

It seemed almost as though the attack on SFC Foreman had been the tactical climax. An unaccustomed silence began to spread, along with the deepening shadows, across the battlefield. Our ammunition supply approached a level that could not long sustain the troop, and replenishment remained impossible. Our advance was now effectively contained by enemy flanking forces on the left, and we still had no way to evacuate casualties.

The only rational course of action was to attempt to disengage and fight our way back to last night's defensive position. Of course, we had been surrounded at last report, so the success of a withdrawal was problematic. My comprehension of our perilous situation slowly floated toward full consciousness as I found myself on the radio requesting permission to withdraw and, apparently, helping to direct the air strikes.

Field mechanics and crews swarmed over those tracks that had taken hits, attempting to restart them. Others were towed off line so that repairs could take place away from the continuing sporadic fire. Exercising good field judgment, the mechanics cannibalized essential parts from two vehicles that obviously were finished. One of these was A-34, a shattered wreck wedged, immobile, between two trees.

I instructed Bob Henderson, the third platoon leader, to strip the hulk of its armament, ammunition, and valuable parts. He dismounted to supervise his men swarming around the permanently

lodged track as they wrenched equipment free from mountings, dragged it the few feet to a waiting ACAV and heaved it aboard. The carcass would be left for the aircraft to destroy after our departure, a mission at which they might be more successful than they had been in their attempts to demolish enemy bunkers.

As we began the slow disengagement, incoming fire slackened further, and I was able to disconnect from the life-sustaining radios and climb down carefully from the faithful A-66. After prudently cleaning myself up enough to be presentable, I picked a path over to Bob and his toiling men. My route crossed a forest junkyard through which a herd of bulldozers seemed to have run amok. Shattered trees, scarred ground, crushed bunkers and trenches, discarded ammunition cans and assorted junk lay everywhere. In the midst of the disorder, the inexperienced lieutenant did a speedy job on A-34, standing next to the collapsed rear ramp and pointing out items he wanted pried loose. Standing still, however, was an error. Just as I scuttled up to him in that crablike posture we quickly learned, Bob's face assumed a perplexed expression and he sank to the ground.

Kneeling at his side while the men continued to slash at the carcass of A-34, I rolled up the jungle fatigue trousers through which he was bleeding. Several lacerations, none spewing blood, meant that he had picked up only some shrapnel. No problem, if the rate of leakage didn't increase before his blood clotted.

"I'm OK, sir. We should be done in about five." Insisting on rising under his own power, although unsteadily, Bob hobbled to the far side of A-34.

The more experienced of his men had been working there all along.

1930 Hours, 26 March 1970

During a sunset invisible through the towering trees, we finally started all vehicles except for the abandoned A-34 and A-18, which was rigged for towing. The bruised line of armor backed across the battlefield, which had been so costly to gain, frontal slopes and weaponry always oriented in the direction of the now silent enemy. Not surprisingly, there were few NVA casualties visible on the field as we inched away. The enemy commander had executed an orderly and effective withdrawal within a well-prepared defensive position that was far larger than any I had previously experienced.

"Flange Two-Nine, this is Writer Two-Nine," I reported. "I'm ready to move out

the advance element now. Can we get any light for the trip?" Overhead aircraft or artillery flare illumination would be necessary within minutes unless we fancied the suicidal technique of turning on our headlights for the return journey, assuming any headlights had survived the firefight.

"This is Flange Two-Nine. Go ahead and move out. Have your point and rear elements throw smoke so that I can put some air on your flanks and rear.

"Writer Two-Nine, wilco, out."

"Two-Six, this is Six. Listen up. Move your tracks out on the route we came in on. If you see anything at all suspicious, shoot it up big time. Be careful. They're out there. When you get through and after you've moved about 300 meters, all the way back past that bombed out area, toss some smoke and contact me. Also, I've been hit. I'm OK" — just like Bob Henderson — "but if you don't hear me on the horn for awhile, you're in charge."

"This is Two-Six. I'll get through. On the way." Mike Healey, with the least bloodied platoon, could best deal with the ambush likely to await us down the trail. Driving straight into it, he might be able to smash his way through and clear the path for the rest of us. There was scant possibility of busting a new trail through the jungle after dark.

The casualties were distributed among the remaining tracks as quickly as their pain allowed. Insufficient time remained for the medics to segregate the dead from the wounded, and both were crowded haphazardly on the vehicles nearest the aid station. Alpha and Charlie Companies' soldiers swarmed aboard, rendering the cavalry vehicles' weapons inoperable and covering the ammunition stacked on the ACAV's floors.

"Writer, this is Racer. We're all loaded up."

"Six, this is One-Six. I'm ready to go."

"Six, this is Three-Six. Me too."

From the rear deck of A-66, Jim grabbed my flak jacket and nodded. He was ready to pull out also.

"One-Six, this is Six. I'm afraid you're last. Make a lot of racket when the rest of us move and throw some smoke out for the choppers. Give us a couple of minutes and then come out as fast as you can. Good luck."

"This is One-Six. No sweat."

The tracks began their ponderous exit from the field. We were completely at the

mercy of the NVA if the second platoon could not break out. Had the expected mines been planted and trees felled across our only exit route? Was the killing zone covered with automatic weapons and grenadiers? The minutes passed as the burdened troop pursued the second platoon. No firing echoed down the trail after Mike's initial bursts when his tracks first pulled out.

"Writer, this is Flange Two-Nine. I've got your rear in sight, also the point. But where're you? Get out some smoke so we can cover you, huh?" A note of irritation intruded into the battalion commander's voice.

"This is Writer. Wilco." I switched over to the intercom. "Hey, Dennis did you get that? How about throwing a few?" Without turning, probably because his neck wouldn't pivot, Dennis unhooked two of our last smoke grenades from a strap securing them to the side of his cupola armor. He dropped the two fizzing olive soup cans over the side. With a gentle pop lost in the roar of the engines, the artillery forward observer's track behind us was wreathed in yellow tendrils of smoke. Acknowledging our signal, Conrad made reassuring sounds over the radio.

"Six, this is Two-Six. You won't believe this! It's clear here. Repeat, clear all the way out." Mike's voice expressed joy first and then relief. If he'd fully understood the risk his platoon had just run, the sequence might have been reversed.

"Roger..." Was it possible that the enemy commander hadn't thought to impede our withdrawal? Were his forces insufficient to defend the bunker complex and hold us in the trap simultaneously? Was he hurt too badly to pursue? Or had he begun to move out toward Cambodia while we were preparing to return southward? Randomness too complex to contemplate just now...

But the first platoon was in the barrel again! Willie McNew reported that a recoilless rifle had opened up on him. One round slammed into the deserted turret of A-18 under tow and McNew dropped the line to return fire with his main gun.

"Six, this is One-Six. You've got a choice. Old 18's back there and it's going to cost plenty to go back and get it. It's stripped and there ain't nothing left on it. Can we leave it?"

The canny McNew was probably lying about completely stripping A-18. There had not been time. But he was unquestionably correct about the probable cost

of retrieving the hulk. Required decision: Did the 1st Squadron's tradition of salvaging every vehicle justify risking the first platoon? And how would we react if the first platoon and its cargo of infantry and casualties were surrounded while trying to retrieve A-18? Decisions were still very difficult to make. I hesitated.

"All right, One-Six. Dump it." No need to instruct the first platoon to hurry. The sounds of the racing engine in the background while Willie was on the air told me that they hadn't paused after their brief firefight. It occurred to me that our rear element may have encountered the anticipated ambush in a formative stage after we had slipped through the noose.

Overhead, LTC Conrad and his staff, with some help from me, directed the air cover on our flanks and attempted to destroy the two vehicles left on the field. Down among the trees it was growing difficult to see and the drivers soon would have to halt if aerial illumination were not forthcoming. But the first and third platoons did use what little sunlight was left to close on the lead element.

"Flange Two-Nine, this is Writer. Have we got any light yet?"

"Not yet, Writer. How many minutes can you move without illumination?"

"This is Writer. Not long. Let's see if our mortars can shoot some for us. We'll keep you advised." It would never do to shoot down the battalion commander with an errant illumination round.

"Roger, out."

With four kilometers of jungle to traverse we were dead in the water unless, and only unless, the remnant of the troop's shattered mortar section back at the night defensive position came through. Undoubtedly, they had at least a few parachute flare rounds remaining in the one undamaged mortar track salvaged from the flames the night before by the desperate driver. Whether the mortar crew could compute, arm and fire a mission after last night's debacle I didn't know.

"Writer Control, this is Six, did you monitor?" Seege was sure to be on all frequencies back at the night defensive position, and I was too tired to repeat all those words again. I assumed the night defensive position was still there because we hadn't heard about it or from it all afternoon.

"Roger," Seege answered at once on the troop frequency. "He's right here."

The raspy voice of Sergeant Smolich, the mortar section chief, came up. "Where are you, Six?"

"We're a little less than a quarter of the way home and hurting. Can you shoot some light?" It was now impossible to read a map so as to provide our current location by checkpoint. Besides, the map case was buried somewhere in the bowels of A-66.

"Yeah we can, Six. Sure."

"OK, do it ASAP. Post the air data from there." I flipped to the higher command frequency.

"Flange Two-Nine, this is Writer. Better get some altitude. They'll call in the air data, but your guess is as good as anyone's where they'll shoot."

"I'll take care of things up here, Writer." Godlike confidence.

The swaying interior of A-66 was a dark jumble of bodies, most of them quiet, but a few making noises that no one wished to notice. The upper deck of the track was covered with infantrymen, as crowded as a lifeboat at sea and just as defenseless. Only our constant companions in the jungle, discomfort and pain, kept me alert and on the radio. Morphine, so temptingly available from the medics, was never an option.

"This is Two-Six. We can't see a thing out front, Six. Do you want me to hold up?" Further seconds, then in very slow motion the back of Dennis' steel cupola hatch seemed somehow lighter. Within moments it was possible to distinguish the individual casualties lying below my legs in the shadows of the fighting compartment. The men littering the upper deck of A-66 stared overhead, their opened mouths expressing amazement at this unexpected miracle.

"This is Six. Drop 200 and fire for effect. Keep one up as long as it lasts. Drop 100 every three minutes or so. And stay on top of Flange Control for that light ship. Outstanding."

"Thanks. We've got about an hour of stuff, Six. Out." Nothing further was required between us.

But, the welcome illumination also revealed the desperation of our condition. Dennis and the worn out gunners slumped over their gunshields. The grunts looked worse. Only the less thoroughly beaten down Marty was in motion as he manhandled A-66 down the dim alleyway through the jungle. One thrown vehicular track on A-66 or any other vehicle on the narrow trail and the whole operation would grind to a halt.

If there exists a merciful providence for the helpless, then we must have qualified,

for we passed through the jungle unmo-
lested. With little warning, the troop
broke into the relative safety of the clear-
ing surrounding the night defensive posi-
tion. Jim and I stared at each other aboard
A-66. He shook his head. I couldn't un-
derstand how we had done it either. For a
few moments we sat together quietly,
then Alpha Company began to move into
the wood line to secure our position. Jim
lowered himself wordlessly to the ground
and, linked by the umbilical cord of the
communications handset leading to his
radioman, was swallowed up in the dusty
gloom.

The ACAVs discharged their grisly car-
goes as each vehicle exited from the last
of the forest. So long as the supply of
stretchers lasted, the injured were placed
upon them. After that, medics pressed
ponchos into service. The dead were seg-
regated to one side. More than an hour of
dusty relays would be necessary before
the medevacs were finished.

In the faint light provided by the aerial
illumination, the haggard crews returned
their vehicles to the well-worn defensive
perimeter and set about cleaning their
filthy tracks, replenishing basic loads and
breaking down weapons. Another testi-
monial to self-imposed discipline and
good sense. There may even have been
something to eat.

In its turn, A-66 dropped its rear ramp
near the choppers as the medical person-
nel rushed over to haul away our casual-
ties. The troop executive officer, 1LT
Paul Baerman, appeared to have the
evacuation well in hand, so I removed my
CVC helmet and, without thinking,
shoved myself over the side of the track.
The mortar section chief caught me be-
fore my legs completely collapsed and set
me back upon my feet. Guided only by
habit, I began to walk unsteadily through
the maze of struggling medics in the di-
rection of the M577. About halfway
there, Conrad emerged from the shadows.
As we approached each other, he held out
his arms and wrapped them around me.

Charlie Company was home.

Epilogue

The randomness inherent in war dealt
Team A and Alpha Troop a very poor
hand during the anonymous battle of 26
March 1970. Already exhausted by
weeks of continuous operations in War
Zone C, and brutalized by the tragedy of
the previous evening, the men were in no
condition to respond to the sudden de-
mand for a rescue mission. Yet, without
complaint and against unknown odds,
they saddled up and played out their un-
promising hand.

While Team A could not prevail on the
battlefield, due to the magnitude of the
enemy force and timing constraints, it
executed its assigned mission superbly.
Through many individual acts of heroism
and admirable technical competence, our
crewmen and grunts saved nearly 100
Americans from death or capture. Aside
from its spectacular horror, a defeat of
this proportion would have been one of
the largest single losses of the war. At the
end of the day, randomness intervened
again and permitted us to deliver our-
selves and our casualties safely.

Some superior authority calculated that
the enemy losses resulting from the
anonymous battle on 26 March 1970
were 88 men. The total for the three
American units that were engaged was
very sizeable as well. Captain Armer,
who took command of the night defen-
sive position that evening, Sergeant
Gutierrez and Sergeant First Class Fore-
man were awarded Silver Stars for gal-
lantry. Except for Purple Hearts there
probably were, as Spec. Four Pagan said
in *Into Cambodia*, no other decorations
for Alpha Troop. Dennis made it out
safely, but 1LT Henderson was killed in
Cambodia on June 19, 1970. 1LT Bill
Nash became MG William Nash (Ret.),
recently the Commanding General of the
1st Armored Division.

I discharged myself from the field hos-
pital a few days after the battle and re-
turned to Alpha Troop with a cast on my
left arm up to the elbow. Our life in the
jungle continued much as before. When
my tour of duty in Vietnam was com-
pleted, I, like most other OCS commis-
sioned officers, returned to civilian life
and an entrepreneurial career of some
success. Regardless of what I may ac-
complish in the years remaining to me,
however, I never again will reach the
level of responsibility entrusted to me at
25 years of age.

This is the challenge and the heritage
that each of you in the 11th Armored
Cavalry have the responsibility of shar-
ing. There is no doubt that your gener-
ation, like ours, will be prepared when our
country again needs the Regiment's
strong arms.

Allons!

Acknowledgments

The heroes of this account are the men
who fought the battles, the cavalry and
infantrymen with whom I had the honor
of sharing so much. To each of them I
repeat my heartfelt gratitude. And to the
officers and men of today's 11th Ar-
mored Cavalry Regiment, I express my

appreciation for causing me to experience
again memories long buried.

My single regret is that this account of
life and leadership in combat had to be
written in the first person, which placed
too much focus on me and not nearly
enough on the men of Alpha Troop. It is
these men and their families, and not the
troop's officers, who deserve the fullest
recognition for their loyal service and
personal sacrifices.

Among my benefactors is BG John
"Doc" Bahnsen (Ret.) who, after a brief
test with a platoon in Charlie Troop, of-
fered me the command of Headquarters
Troop, 1st Squadron. Doc allowed me to
operate Headquarters Troop in and
around Loc Ninh as a combat line unit
rather than in the usual sedentary mode.
The practical worth of this experience
was beyond any price.

COL John Norton (Ret.) gave me Alpha
Troop in late December, 1969. He was
both an understanding mentor and an
exacting task master. It was he who, as
the 1st Squadron Commander, selected
Alpha Troop to lead the way to War Zone
C for the entire Regiment.

And of MG Mike Conrad (Ret.), what
more can I say about the man who held
me close during the midnight flight to a
field hospital and who personally deliv-
ered me, insensible, to the surgeons?

But it is Sergeant First Class Foreman
whom I will never forget.

John Poindexter holds a BS degree in
Business Administration from the Uni-
versity of Arkansas, and a masters in
Business Administration from New York
University, which also granted him a
Ph.D. in Economics and Finance. He
taught economics and finance as an
Adjunct Associate Professor at Long Is-
land University in 1974 and 1975. In
1966, he volunteered for the U.S. Army
and for OCS, and was commissioned a
2LT in Armor. At his first assignment,
the 3rd ACR in Germany, he com-
manded L Troop. After airborne and
Ranger training, he volunteered for
service in Vietnam, assigned to the
11th ACR. He commanded HQ Troop,
1st Squadron, and Alpha Troop, suc-
cessively, between September, 1969
and May, 1970. In addition to two Pur-
ple Hearts, he was awarded the Silver
Star, the Soldiers Medal, two Bronze
Stars, the Air Medal, the Vietnamese
Cross of Gallantry with Silver Star, and
several other decorations.

The Warrior S2

We have intelligence in quantity, but we need to focus our efforts

by Captain David E. Norton

Can the maneuver battalion S2 answer the battalion and company commanders' critical information requirements, and if not, are we asking the right questions?

Before we address the question of whether the S2 can answer the commander's requirements, we need to identify what intelligence is really critical at the task force and company/team level. Too often, when we think intelligence on the battlefield, we get caught in the trap of more is better. We all want to know everything there is to know about the enemy, the terrain, the weather, and every other aspect of the fight. We are so overloaded with information that we don't have the time or assets to translate the information into intelligence. As a tank company commander, I always preferred some basic intelligence about my enemy and the battlefield situation to a tremendous dump of information that I couldn't possibly assimilate into useful battlefield intelligence.

My approach may sound too simple for the modern battlefield, but as a company commander, I only looked for three basic things from the battalion S2. First and foremost, I wanted the S2 to take a stand, not only on the enemy's most probable course of action (COA), but also on the enemy's most dangerous COA. This allowed me to address the enemy's most probable COA while maintaining a plan to deal with the most dangerous COA if it occurred. Second, based on the enemy's most probable COA, I wanted to know when and where during the battle I could expect to make contact with the enemy. This includes each of the seven forms of enemy contact: visual contact, electronic warfare contact, indirect fire contact, direct fire contact, obstacle contact, air contact, and chemical contact. Based on this intelligence provided by the S2, I could adjust formations, movement techniques, fire control, and every other part of the operation accordingly. Finally, I wanted to know the enemy's center of gravity, that one element of the enemy from which he drew his power and freedom of maneuver. Knowing the center of gravity allows the commander to focus his combat power on the enemy's critical vulnerability to bring about the rapid

destruction of the enemy's ability to conduct combat operations.

The first step in answering the commander's questions is developing the enemy's most probable COA. This is not the first step in the intelligence process, but this is where the intelligence preparation of the battlefield (IPB) is turned into useful intelligence. There are a number of elements involved in deducing the enemy's most probable COA. These include, but are not limited to, enemy vs. friendly capabilities, effects of terrain and weather, enemy doctrine, and most importantly, the enemy's ultimate objective. Armed with this information, the S2 can build an enemy COA that is realistic and contributes to achieving the enemy's overall mission.

The first question the commander should ask the S2 when he briefs the enemy COAs is, "If you were the enemy, would you fight it this way?" Too often, the answer will be "No," which leads to the question, "Then why do you think the enemy will fight it this way?" The only sure way I've seen to develop the enemy's most probable COA is for a soldier who understands enemy doctrine, and understands the enemy mission and tactics, to put himself in the enemy commander's position and develop the best possible COA based on the information available. This could be an experienced S2, or in cases where the S2 doesn't possess a wealth of maneuver experience, the battalion XO, S3, or assistant S3 should assist in preparing the enemy COA. The development of the enemy COA is far too important to risk a sub-standard product simply because staff members don't want to cross that perceived line between S2 and S3 responsibility.

With the most probable COA completed, the staff should address the enemy's most dangerous COA. This is the enemy COA that could cause friendly forces the most harm. When determining the enemy's most dangerous COA, it is important to take the enemy's most probable COA into consideration. The maneuver commander needs to know, what is the worst thing the enemy can do to me, if I build my plan around the en-

emy's most probable COA. This is an important aspect of developing the enemy COAs that is often overlooked. An enemy COA can only be considered the most dangerous if it poses significant risk to friendly forces while they are executing the plan developed to defeat the enemy's most probable COA. Armed with the enemy's most probable and most dangerous COAs, the commander and staff can plan an operation to defeat the most probable COA while building branches to address the most dangerous COA.

Determining the enemy's most probable COA translates quickly into a situational template of the enemy that will provide the answers to the commander's second question. Templating the enemy allows the S2, [US ARMY] using a product such as Terra-base, to determine range fans for enemy weapon and visual acquisition systems. This answers the commander's questions of when he can first expect to be observed, when will he make direct fire contact, when will he make indirect fire contact, and when he can expect electronic warfare contact. Once we determine the enemy's capabilities and place range fans on the map, we can determine the most probable location of enemy obstacles. Based on the information outlined above, we can apply enemy doctrine and make a good assessment of where to expect enemy close air support or chemical strikes.

Initially, this intelligence provided by the S2 and the rest of the battalion/task force staff is the best guess of the battlefield situation based on the information on hand. Once the initial staff work is done, the S2, together with the commander, S3, and scout platoon leader, must build a reconnaissance and surveillance plan that confirms or denies the enemy COA. This should be a very directed effort that is targeted at gathering the information critical to confirming the enemy COA. The scout platoon is the primary intelligence asset at the battalion level, and it is imperative to focus the platoon's efforts. Based on reports from the scouts performing a directed reconnaissance and surveillance plan, the S2 can confirm his initial enemy assessment,

or use the information to make changes to provide the commander with a clear picture of the battlefield.

Battalion S2s who can answer the commander's first two critical intelligence requirements have provided the type of intelligence that leads to victory on the battlefield. The final critical element the S2 can provide the commander is the enemy center of gravity. This is the single element from which the enemy derives his freedom of maneuver and will to fight. Often this is elusive, and it is different for each unit and at each level of command. In trying to identify the enemy center of gravity, it is imperative that the S2 focus on the correct enemy echelon. Knowing that the center of gravity of the enemy nation is its industrial base is of little use to the task force or company commander who is facing an enemy company, battalion, or brigade. The ability of the battalion S2 to identify the enemy center of gravity and the critical vulnerability leading to the center of gravity will enable the commander to focus his combat power and quickly bring the enemy to his culminating point, achieving ultimate success.

Can battalion S2s provide the type of information I have listed above? Do they have the information at their disposal and the assets to transform that information into tactical intelligence? When the necessary information is not available, do task forces have the organic assets to go out and get the information they need?

I believe that the answer to all of these questions is a qualified yes. We have a glut of information available to the S2, and with improved downlink systems, this information should be in real time or near-real time. Additionally, the scout platoon is an outstanding asset that, when provided with proper focus, can fill intelligence gaps. This leaves one important ingredient missing from the formula. Can we translate information into tactical intelligence? This is not just an S2 question. Commanders must provide the focus by asking the right questions; they cannot simply expect their S2 to know what they want. If intelligence truly drives the fight, then the commander must drive the intelligence.

The battalion XO and S3 must constantly evaluate the intelligence picture to identify critical gaps, and the Army, in general, needs to focus more on developing tactically proficient S2s who can fight the enemy plan with confidence and expertise. This building of tactically proficient intelligence officers needs to start at the basic course and continue throughout the intelligence officer education process.

The United States Army has perhaps the greatest military intelligence capability in the world, but too often, we are so impressed with capabilities that we lose sight of requirements. We need to remember that the guys at the company command level, the ones who are where the rubber meets the road, don't have staffs, and don't normally have an abundance of extra time. Company commanders are concerned with the enemy to their direct front and the enemy just over the next hill; anything else is beyond their area of interest. The battalion S2 needs to be able to tell these company commanders how many and what type of enemy systems they will see, where they will come into contact with these systems, how will the enemy use these systems, and the effects the enemy systems will have on friendly forces. These intelligence requirements sound simplistic in a force focused on twenty-first century gadgetry designed to achieve complete information dominance, but this is the intelligence that trigger-pullers need to accomplish their mission.

We have the capability to provide our frontline warriors at the company and battalion level with the intelligence they require, but we need to better focus our efforts. Commanders at both the battalion and company level need to ensure that the

battalion S2 understands their intelligence requirements and then follows up to ensure those requirements are met. The brigade S2 needs to better translate information from higher into usable intelligence, allowing the battalion S2 the time to concentrate on the details required at his level. The intelligence community needs to do a better job of training the young lieutenants and captains who will fill the role of battalion S2s in basic tactics at the small unit level. We as an Army need to remember that information becomes intelligence only if it can be provided in a useful format to the guy on the ground who must close with and destroy the enemy.

CPT David E. Norton was commissioned through OCS in 1990. He served as a platoon leader with C Company, 1-34 Armor during Desert Shield/Storm. Other assignments include tank company commander, XO, HHC commander, and BMO in an armor battalion. Additionally, he served as a brigade AS3/plans officer in Korea. Currently, he is an instructor of Army operations and tactics at the Military Intelligence Officer Basic Course.

Automated Training Development and Management Resources

The Army Home Page, www.army.mil, and the Armor Center Home Page, <http://knox-www.army.mil/>, provide dozens of Internet links to useful resources for Armor and Cavalry leaders and soldiers. However, they do not contain doctrinal and training publications such as FMs, TMs, and ARTEP MTPs. Those publications can be accessed through the following Army Internet sites:

Reimer Digital Library (RDL)

The RDL is an Internet website containing hundreds of approved doctrinal and training publications. It contains field manuals, training circulars, ARTEP Mission Training Plans, training support packages, and much more. However, it does not contain technical manuals. The Army Training Support Center at Fort Eustis, VA, manages the RDL. For more information, visit the website at <http://155.217.58.58/atdls.htm>.

Electronic Technical Manuals (ETMs) Online

The USAMC Logistics Support Activity (LOGSA) at Redstone Arsenal, AL, manages this website that contains up-to-date electronic versions of many technical manuals. Most TMs are not approved for public release, but are considered "sensitive but unclassified." Therefore, users must obtain an account through LOGSA. For information on application procedures, go to <http://www.logsa.army.mil/pubs.htm> and click on ETMs Online.

U.S. Army Publishing Agency (USAPA)

Some publications are not yet available in the RDL or ETM Online. The only way to acquire those publications is by ordering them through the USAPA website at <http://www.usapa.army.mil/>. This site also contains an extract of DA Pam 25-30, which lists the latest dates and change numbers for all doctrinal, training, and technical publications.

Light Armored Vehicles Predominate at British Show

by Peter W. Brown

The Defence Systems and Equipment International 1999 show at Chertsey, Britain's main ground and naval defense industry show, has undergone a transformation. As well as changing both name and venue, there has also been a major change of style, with more non-British companies taking part. The move builds on trends of international cooperation which have been growing over many years, as more and more we see components from "abroad" used in British equipment, as well as various co-production arrangements.

This report concentrates on armored vehicles, although all types of equipment, from boots to helicopters, were on exhibit. Even naval vessels were part of the overall display, but on a separate site.

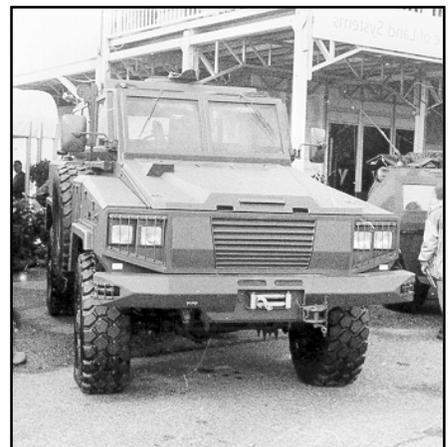
Vickers Defence Systems, as usual, had a large, comprehensive display, and included the only main battle tank at the show. The 2E model of **Challenger 2** offered for the export market differs somewhat from the British Army version. Main armament is the same 120mm rifled gun, but it was shown fitted with two SFIM sights giving full "hunter-killer" capability. The 2E carries the Europack power pack, which is a German MTU 883 U-12 diesel engine operating through a Renk automatic transmission. Other changes include a .50 caliber M2 heavy machine gun that can be operated by the loader. (Vickers also showed a remotely-controlled version with its own video camera suitable for this and other vehicles.) The Challenger had armored skirts with rubber flaps on the bottom edges and another rubber flap across the hull front. Several potential customers, including Greece, have seen demonstrations of the export Challenger 2.

Vickers partnership with the Swiss company, Mowag — now owned by Diesel Division, General Motors Canada — resulted in two very different wheeled vehicles on show. The larger of the two

was the **Piranha** in its 8x8 form, which is perhaps its most common configuration. The USMC operates this version as the LAV in several roles, although it is also available in 6x6 and even 10x10 layouts. Vickers has a license for the latest Piranha IV series, which has adjustable hydro-pneumatic suspension, central tire pressure regulation, and anti-lock brakes, a good feature for a 13.5 ton vehicle capable of 100km/h on the roads.

For roles where size is not needed or may be a hindrance, **Eagle II** is a 4x4 armored scout and utility vehicle. Based on the AM General Hummer chassis, it is armored against small arms fire and designed to carry four people with the capability for more if needed. What looks like a turret is a fully rotating armored observation cupola that allows all-round

observation. Armament is defensive only, with a light machine gun and smoke grenade launchers. Other wheeled armor appeared at the Vickers exhibit as a result of Vickers' acquisition of Reumech OMC of South Africa. This firm manufactures a range of specialist vehicles with protection against mines, and also the **Rooikat** armored cars and the **G6** wheeled 155mm self-propelled howitzer, although neither was on display. Their exhibit did include the lighter **Nyala** series, including **RG-12** configured as a riot control vehicle and the **RG-32** scout, which looks like a conventional 4x4 off-road vehicle, but gives good protection to anyone not wanting an obviously armored vehicle. The purposeful **RG-31** is already used around the world in various peacekeeping missions; as a personnel carrier, it carries up to ten people plus the



The Eagle II, upper left, is essentially a HMMWV chassis with an armored body. The Mowag Piranha IV, at left, shown in the 8x8 configuration. The Nyala RG-31 has been used in various peacekeeping missions around the world.



Light Armor... ...in Profusion

On the Alvis stand was Hagglunds CV9030, upper left, which will equip Swiss Army units.

Hagglunds BvS10, lower left, offers protection coupled with very high mobility on marginal terrain.

WARRIOR 2000, at upper right, was a contender for the Swiss Army but lost out to the CV9030 despite winning high praise from the troops who tested it.

BIONIX 25, at lower right, is optimized for the Pacific Rim nations, and shows how the older, traditional suppliers will face increasing competition in the coming years.



driver, who are all well protected. It can be fitted out with a range of weapons or as a specialist equipment carrier.

Another vehicle on the Vickers stand had made the long journey from Singapore to attend. Manufactured by Singapore Technologies Automotive (STA), **Bionix** is a compact design optimized for conditions in the Pacific Rim countries where small size is a positive feature when traveling among rubber plantations and forests, or over roads and bridges not designed for heavy vehicles. It comes in two forms; the **Bionix 25** at the show carried a two-man turret with stabilized 25mm Bushmaster cannon plus coaxial and external machine guns and a full range of day and night sights. But the vehicle can also be fitted with a one-man, open-top 40/50 turret with the Chartered Industries of Singapore 40mm automatic grenade launcher and .50 cal. Browning heavy machine gun. Either version also carries seven infantry.

This vehicle is supported by the unusual **Advanced Logistics Proactive System**, which STA's own stand demonstrated using a palmtop computer. It can access a full vehicle operator's manual and a fault-finding system that shows where components are located and demonstrates how to find and fix problems using animated displays, voice commands, and even video. Integrated with a vehicle repair and upgrade logging system and a spares package which can be linked to a central location using standard email and phone links, it doubles as a task trainer. All this is fully upgradable via online links, so

doing away with bulky and expensive paper manuals.

Britain's other main armor producer is Alvis, whose ownership of the British GKN and Swedish Hagglunds companies gives them a wide range of medium and light vehicles. This brought about what must be a unique event on one stand. Alvis' own contender for the Swiss infantry combat vehicle competition, **Warrior 2000**, is an evolution of the GKN Warrior which proved itself in British service in the Gulf and Bosnia. With improved armor and a 30mm cannon, plus various changes to meet Swiss requirements, it performed well in trials but lost out to Hagglunds' **CV9030**, which was shown on another part of the same stand. This vehicle also carries a 30mm cannon and is similar to the current Swedish Army vehicle, though that mounts a 40mm cannon.

In common with most modern AFVs, **CV90** is available in several forms — infantry vehicle, mortar carrier, command post vehicle, scout vehicle, recovery versions, and also antitank vehicles, with 105mm and 120mm guns. The need to keep the vehicle's weight low means it cannot offer main battle tank levels of protection, but its mobility, and especially its firepower, could fill the large gap between light vehicles with automatic cannons and heavy MBTs. This makes it very suitable for rapid reaction forces.

Also emphasizing mobility while still offering protection is the **BvS10**, a development of the **Bv206S** series of vehicles

designed for marginal terrain. Originally developed to be useful in deep snow, they offer mobility in all areas of poor terrain where the advantages of their two-part layout with two-axis articulation keeps its four tracks in contact with the ground at any one time. **BvS10** has almost twice the carrying capacity of earlier vehicles and offers all-around protection against small arms, unrivaled mobility, plus low maintenance costs.

Alvis naturally showed their own designs, including their highly successful **Scorpion** light tank fitted with 90mm gun and diesel engine. While not a new design, it makes a good choice for anyone seeking a small vehicle with high firepower. Another strong selling point is its range of associated vehicles — troop carrier, command, and recovery — based on common components. Here, Scorpion-sized **Spartan**-based types and the longer and wider **Stormer** series give two ranges of options. Two different **Stormer** versions were shown. **Shielder** has just entered service with Britain's Royal Engineers. It is a vehicle-launched scatterable mine system using the basic **Stormer** chassis fitted with an Alliant Techsystems mine-launching system. Designed to lay an antitank minefield, it should not be confused with the not dissimilar GIAT Minotaur system used in the Gulf. **Shielder** may be seen as defensive in nature, while **Stormer 30** is a reconnaissance vehicle or light tank. As its title suggests, it carries a 30mm automatic cannon and TOW missile launchers on either side of its two-man turret. This



A minelaying vehicle, the **Shielder** (upper left) is in service with the British Army. It is based on the Alvis **Stormer** chassis.



Scorpion 2000, lower left, is an overhaul and upgrade product that includes a new diesel engine, better sights, and a 90mm gun.

The British Aerospace 120mm armored mortar system, at right, combines a Swiss vehicle, based on **Piranha**, with a British mortar in an American turret. This breech-loader will fire in both direct and indirect modes.



results in a small, highly mobile, light three-man vehicle with impressive firepower. Performance includes speeds up to 80 km/h forward or reverse down to a minimum speed of 4 km/h, both of which could be very useful in different situations. Armor is light, but it can be carried by helicopter, either combat-ready by CH-53 or unladen by CH-47. One unusual item taking part of the mobility display was a **Spartan** fitted with one-piece rubber tracks. This is a private venture, the British Army having recently awarded a large contract for conventional tracks. They can be fitted to new or existing **Scorpion** or **Stormer** ranges and reduce ambient noise levels dramatically.

Other light armor from Alvis confirms their versatility. **Scarab** is based on widely available Mercedes Unimog parts and is a go-anywhere scout and liaison vehicle well protected against .50 cal. and 14.5mm machine gun fire, shell splinters and mines. Armament can be fitted as required, with a .50 cal. M2 Browning on a remotely-controlled mounting being only one of many possibilities.

Alvis are UK licensees for the **Piranha II and III** series of these versatile vehicles, stemming from the former GKN/Mowag collaboration, which resulted in vehicles being manufactured in England for sale to Saudi Arabia and Oman. They showed one not unlike an LAV, with an AC Delco 25mm cannon turret carrying two TOW launchers. To confuse matters still further, another Piranha was on the British Aerospace stand. This one had an armored mortar fitted with the **Royal Ordnance 120AMS**, which is a turret-mounted, breech-loaded 120mm mortar.

In this form, it has been supplied to the Saudi Arabian National Guard. The mortar turret has also been fitted on M113s in both standard and stretched configurations, which offers light forces very effective supporting fire in indirect and direct modes.

Also not on the parent stand were two **Alvis CVR(T)** variants. One was on the **ABRO** display, this being a 30mm cannon-armed **Scimitar** fitted with a new diesel engine. Britain is retrofitting its fleet with these new engines to improve their safety and extend their operational range and service life. **ABRO** performs deep maintenance and repairs on a wide range of vehicles — armored and otherwise — for the British Army, as well as carrying out other unusual tasks. (This organization did the modifications to the funeral carriage of the late Diana, Princess of Wales, and is restoring the RAC Tank Museum's Tiger tank.) Another rebuild package broke new ground. Most defense manufacturers are cagey when discussing prices, but **Repaircraft** were quoting a price of £200,000 (or \$320,000) for **Scorpion 2000**, a major rework of the basic **Scorpion** that includes a new diesel engine and modernized sights. They offer a general overhaul and upgrade package which can be tailored to specific requirements, which include a 90mm gun, among others. The large auxiliary power unit on the rear of the hull powers the vehicle systems without the need to run the main engine, resulting in a considerable extension of the engine's life. Similar upgrades can also be made to other **CVR(T)** vehicles. **Repaircraft** can supply both refurbished vehicles from stock or

upgrade an existing user's vehicles as required.

If there was such, awards for the most unusual and ugliest vehicles would both have to go to the **Chieftain AVRE** (Armored Vehicle Royal Engineers). These old gun tanks have been given a new lease on life as engineer vehicles, fitted with a top rack for carrying fascines and able to be fitted with a range of devices for obstacle creation or clearance. The one which took part in the mobility display carried several items produced by **Pearson Engineering Ltd.**, specialists in dozer blades, mine plows, and other such add-on equipment for several series of armored vehicles.

Among all this new equipment, the good old "Fifty Browning" appeared in several places. It will no doubt continue to give strong support for many years to come. It would be interesting to see which of the other weapons on show will still be around in another three quarters of a century.

Peter William Brown is a computer programmer with a lifelong interest in armored vehicles. For four years, he edited *Tracklink*, the magazine of the Friends of the Tank Museum at Bovington, England. He has reported on new equipment and trends for many military magazines, including *TANK*, *ARMOR*, *AFV News*, *the Journal of Military Ordnance* and other journals.

The Multicapable Maintainer: A Vital Combat Enabler

by E.C. Starnes
Ordnance Corps Corporate Affairs

The Army of the 21st Century will operate on a digitized, non-linear, fast-paced, and lethal battlefield. One key to surviving on that battlefield will be combat systems' readiness and a commitment to placing soldiers with the right skills and technology at the right place on the battlefield to quickly diagnose and repair these systems.

The Army's Force XXI divisional redesign requires combat service support (CSS) units to be more agile and capable of covering greater distances on the battlefield to keep up with highly mobile and lethal maneuver forces. Likewise, it requires maintainers with a broader range of skills who are able to complete both organizational and on-board direct support repairs forward on the battlefield. The Multicapable Maintainer (MCM) is an Ordnance Corps initiative that supports these critical requirements.

"The intent," explained Dr. Aileen Tobin, program manager, "is to develop two, full-up MCMs — one for the Abrams tank and one for the Bradley Fighting Vehicle — who can be relied upon to perform all current organizational and on-board direct support tasks for the M1 tanks and M2/3 fighting vehicles in the maneuver battalions."

"The goals of the program were defined in 1998," explained MG Dennis K. Jackson, Chief of Ordnance. "Those goals are to combine unit and on-board direct support maintenance skills, align maintenance skills with technology, enable the force with the best tools and technology, and optimize capabilities and the impact on combat effectiveness." This has required a realignment not only of training, but also the Military Occupational Specialty (MOS) structure in Career Management Field (CMF) 63.

The MCM program is an outgrowth of an earlier study conducted from August 1991 to January 1993 to combine 17 CMF 63 MOSs into five notional MOSs responsible for both organizational and direct support maintenance. In May 1996,

a follow-on study was initiated to compare two consolidation options. Summarizing this study, Tobin said, "We looked at Abrams and Bradley systems mechanics versus hull and armament sub-system mechanics. The results favored the systems over the sub-system mechanics."

"Obviously," noted Jackson, "this is a large and complex initiative which will significantly benefit the overall organization, management, and performance of maintenance operations, as we know them today under the Army of Excellence."

The new Abrams MCM (notional MOS 63A) will take on all of the Abrams organizational tasks currently performed by the Abrams Turret (MOS 45E) and Abrams Hull (MOS 63E) Mechanic, as well as the on-board direct support tasks now performed by the Armament (MOS 45K) and the Track Vehicle (MOS 63H) Repairer.

Similarly, the new Bradley MCM (notional MOS 63M) will assume all of the Bradley tasks currently assigned to the Bradley Turret Mechanic (MOS 45T) and the Bradley Hull Mechanic (MOS 63T), as well as the on-board direct support tasks now performed by the Armament Repairer (MOS 45K), and the Track Vehicle Repairer (MOS 63H).

"To optimize the capabilities of these MCMs and their impact on combat effectiveness," noted Jackson, "we will also realign all the wheeled vehicle, armored personnel carrier (M113), recovery vehicle (M88), and Multiple Launch Rocket System maintenance currently conducted by the 45E, 63E, 45T and 63T personnel to MOS 63B/S (Light/Heavy Wheel Vehicle Mechanic) and 63Y (Track Vehicle Mechanic) as appropriate." According to Tobin, transition training was scheduled to begin for the mechanics assigned to the 4th Infantry Division in Fiscal Year 1999. Skill level 1 and 2 transition training was to be conducted either at the Armor School or by utilizing mobile training teams, while skill level 3 (Basic NCO

Course) was to be conducted by mobile training teams and/or Regional Training Sites-Maintenance. Reserve Component units converting to Force XXI prior to Fiscal Year 2006 are also targeted to receive mobile training teams.

Resident training will be phased in as follows:

Advanced Individual Training (AIT): February 2000, instructor certification; June 2000, first class starts; and, October 2000, first class graduates.

Basic Noncommissioned Officer Course (BNCOC): January 1999, instructor certification; and 3d Quarter, Fiscal Year 1999, first class graduates.

Advanced Noncommissioned Officer Course (ANCOC): No change to the Program of Instruction.

The Abrams Tank System Maintainer course will be 15.3 weeks in length and will train 40 critical tasks to support the M1A1; an Additional Skill Identifier (ASI) course will support the digitized M1A1D, M1A2, and the M1A2(SEP) systems. The Bradley Fighting Vehicle System Maintainer course will be 13.4 weeks long and teach 20 critical tasks on the M2A2, M3A2, BFIST, and Linebacker systems; an ASI course will focus on the M2A3 when it is fielded. All courses will incorporate organizational and on-board direct support tasks.

"In addition to Force XXI units," Tobin said, "graduates will also be assigned to Army of Excellence units in lieu of existing 45E/63E and 45T/63T mechanics.

Key to Success: The Forward Repair System-Heavy

The overall success of the MCM proposal will depend on several other key enablers being in place. A major enabler is the Forward Repair System - Heavy (FRS-H), which is a flat rack-mounted maintenance platform designed to support forces in the forward battle area. "The FRS-H is a 'must have' enabler for Force XXI," stressed Jackson. "It will

provide the Multicapable Maintainer with the ability to repair battle damaged heavy combat systems 'on-site,' up through the direct support level."

The FRS-H has a 5.5-ton crane, which is MIA1 capable, full arc and MIG welding, state-of-the-art diagnostics capability, industrial-grade pneumatic and electronic tools (with life-time warranties), a 175 PSI air compressor, and a 30 kw tactical quiet generator. The diagnostic enablers which will enhance the MCM's abilities to provide "Service to the Line, On Line, On Time" include the Soldier Portable On-System Repair Tool (SPORT) and Integrated Electronic Technical Manuals (IETMs).

"The FRS-H provides high tech on-site support for Force XXI heavy combat systems," explained Jackson. "It minimizes the need for additional maintenance equipment to complete the mission. The FRS-H will replace the current M113 maintenance vehicle (with its entourage of cargo and tool vehicles) and displace outdated tool sets.

"The FRS-H has sufficient mobility to deploy with the combat trains and provide continuous support of the maneuvering forces. This is integral to the ability to roll-up organizational and direct support maintenance capabilities in the Force XXI design. We will be able to move our direct support on-system capability forward.

"The design of the enclosure and components provides maximum efficiency, capability, safety, and accessibility," Jackson continued. "Since the system is assembled on a flat rack mounted variant of the PLS vehicle, it can perform its mission mounted or dismounted."

Keeping up with the maneuver forces is essential, and the FRS-H and its associated PLS vehicle are designed to do that. The PLS is equipped with a 500-horsepower, V8 Detroit Diesel 8V92TA engine and a five-speed automatic transmission. Central tire inflation, Jackson explained, gives the truck the ability to cross rugged terrain with ease. The truck is capable of operating at a top road speed of 56 miles per hour and has a fuel capacity of 110 gallons with a cruising range of 336 miles.

"Simply put," Jackson stated, "the Army cannot afford to reduce maintenance manpower requirements without the more proficient and better-equipped maintainers represented by the MCM and FRS-H programs." The MCM program is a cooperative effort between the Ord-

nance Corps and the Armor branch. Participating as part of Tobin's MCM matrix management team were representatives from the Combined Arms Support Command's Directorate of Training and Directorate of Combat Developments, the Ordnance Center and School's Directorate of Instruction, the Ordnance Personnel Proponency Office, the Ordnance Center and School's Noncommissioned Officer Academy, and the Armor School's 1/81 Armor Battalion, 1st Armor Training Brigade.

Ordnance Units and Organizations Will Change with Introduction Of Multicapable Maintainer

In testimony before the House Armed Services Committee, LTG John G. Coburn, the Army's Deputy Chief of Staff for Logistics, noted: "A significant reason we enjoy an excellent readiness posture is the extraordinary efforts of our outstanding soldiers. Our soldiers in the field are working harder than ever to keep our equipment combat ready."

The Ordnance Corps is working to reorganize units and organizations to ensure that these hardworking soldiers have a structure to support their efforts. In conjunction with the introduction of the Multicapable Maintainer, the Forward Repair System-Heavy, and embedded diagnostics, the Corps is working diligently to ease the maintenance burden on the already short number of maintainers in the field. Issues impacting on the programs include reducing the cost of maintenance, more efficient planning of the soldier's limited maintenance time, less strain on finite transportation, and an ultimate goal of limiting, if not eliminating, the need for unscheduled maintenance.

"The current program of fix forward will become replace forward - fix rear," noted MG Dennis K. Jackson, Chief of Ordnance. "We will have one maintenance level for maneuver battalions and rely on tailored teams to work both direct support and organizational support.

"Field level maintenance will focus on end item or on-system repair through replacement of components and assemblies," Jackson noted. Under the management of maintenance shop operations, support operations cells, and materiel management centers, this level of main-



tenance will focus on readiness and will be performed within battalions, brigades and armored cavalry regiments, divisions, and maintenance companies in the corps and theaters.

"The sustainment maintenance level will focus on off-system repair," explained Jackson. "This is the repair of components and assemblies, and will be done by Department of the Army civilians, contractors, and component repair companies." This level of maintenance will be conducted in the corps and theater and will be managed by the Integrated Sustainment Maintenance Manager.

According to Jackson, "This concept of maintenance will optimize the readiness of weapon and support systems forward, while leveraging on the Army's Velocity Management and the Battlefield Distribution System at the corps and theater level."

A reduction in maintenance repair cycle time will be accomplished through the rollup of organization and direct support repair at the field maintenance level. "This will be realized," noted Jackson, "by significant reductions in the administrative and coordination delay time."

This is not a new effort. "Since 1995," Jackson stated, "we have made major changes to the Ordnance force structure to support Force XXI TOE division and corps units. Our new maintenance organizations will be more modular and flexible."

The program will require that the key enablers be in place. These include the multicapable maintainer, the Forward Repair System-Heavy, the Contact Maintenance Truck, and modern tool kits and shop sets. "We also need to ensure that we install and enhance on-board diagnostics tools. From there, we can move to a prognostic capability through software development."

The goal of the complementary programs is to provide maintenance soldiers, organizations and equipment that increase readiness and combat power.

Addressing the Need For More Effective Battle Drill Execution

by Major Kevin W. Wright

Few would argue that battle drills are fundamental to winning engagements and battles. *FM 25-100, Training the Force* defines battle drill as “a collective action executed by platoon or smaller elements without applying a deliberate decision making process.” A drill is “initiated on cue, such as an enemy action, or simple leader’s order, and is a trained response to the given stimulus. It requires minimal leader orders and is standard throughout like units.” The digitized battlefield will increase the amount of information that will be instantly available to leaders and therefore increase, not decrease, the need for battle drill. We should, therefore, be very concerned that observers at each of our Combat Training Centers (CTCs) have long been telling us that units have problems executing battle drills.

CTC Trends publications state that in making contact, “Bluefor units habitually fail to execute fire and maneuver” (*CTC Trends* NTC 2QFY95). The observer goes on to recommend that units emphasize platoon and company battle drills in training. During one CTC rotation there were 67 contacts documented. Only 23% of these contacts were initiated by Bluefor and a battle drill was initiated in only 22 of the contacts. The good news cited by observers was that “when executed, drills were done well.” If this is true, then the solution to unit problems is not simply to increase time spent practicing drill execution. If soldiers, crews, and platoons are able to execute drills as trained, then leader failure to plan, prepare, and supervise drill execution with an eye to mission accomplishment may be the underlying problem.

Leaders must understand that the fundamental purpose of a drill is to posture the unit for continuing its mission. A drill, like all other battlefield actions, must not be wholly reactive. While one purpose of a drill is to “enhance the chance for individual and unit survival on the battlefield” (*FM 25-100*) its successful execution can only be measured by how efficiently the unit or crew is prepared to continue its tactical mission. A drill executed flawlessly in accordance with manuals can take too much time or possess an end state in which the unit is no longer postured to accomplish its mis-

sion. A well executed drill is not simply one which merits a “GO” on all its elements, but also one which is tailored to the situation and allows the unit to continue its mission. Some drills, such as change of formation or movement techniques not only protect the force but can place the unit at a position of advantage so that the enemy must react. An ability to execute these drills is only a partial solution. Anticipating the drill, briefing it, and rehearsing it so that the drill is tailored to the terrain and relation of forces is a must. Crews and platoons must not execute drills strictly in accordance with the diagrams and sub-tasks of manuals without regard to their situation and relation to other forces. As *FM 25-100* states, battle drills “build from the simple to the complex and focus on the basics.”

Ideally, individual, crew, and platoon battle drills are nearly transparent to the team commander as he quickly assesses the situation and provides only those instructions which focus the unit on continuing its mission. In a recent NTC rotation, the lead team of a TF attack was unable to successfully LD, let alone accomplish its mission, as a direct result of poor drill execution. The team was in an attack position when it was hit with artillery, which included a non-persistent nerve agent. Although this attack could, and should, have been templated, the team still had the potential to accomplish its mission had it only executed battle drill effectively. For nearly an hour, the team’s communications and decision-making energies were consumed with reacting to the attack rather than with continuing its mission. Movement to subsequent locations, M256 kit procedures, masking/unmasking, evacuation of casualties, and reporting were a few of the many activities of the unit. When viewed in isolation, all these actions are valid, but collectively, the unit lost its mission focus. We fight as we train. The unit did not train using multi-echeloned techniques in which individual, crew, and platoon drills were executed simultaneously during a company mission. It is not surprising, therefore, that having to do so in “battle” proved to be too much of a challenge. This is a common occurrence at Combat Training Centers. If a unit can’t quickly formulate and translate

decisions after contact, then it is not trained adequately on drill and the leadership does not understand that a drill is only a means to continue the mission. Individuals must be aware that their execution of tasks must contribute to, not distract from, the crew’s ongoing actions. Crews and platoons, in turn, must not allow their drilled activity to detract from the unit mission.

Drill execution may not require a deliberate decision-making process, but the leader who plans for and anticipates drills goes a long way towards ensuring their success. Smart leaders anticipate required actions based on their vision of the enemy and themselves on the terrain throughout an operation. This mental visualization or wargame allows the leader to anticipate the need for drills so that they can be briefed and rehearsed. During another NTC rotation, a team deployed to the LD only to have an enemy artillery-delivered FASCAM fired on it. The FASCAM blocked a defile where the team was situated. None of the platoons knew how to react, and the commander failed to develop the situation. The unit quickly became attrited to the point that it was no longer able to function as the TF advanced guard. Had the commander applied his knowledge of enemy doctrine and capabilities with the S2’s template, he could have anticipated the required drills. He and his leaders could have then planned and rehearsed the required drills and executed them given the terrain and array of friendly forces at that point. TF and company operations orders rarely address actions on contact with any specificity.

Proper training is the essential element in preparing units to effectively execute battle drills. “The goal of training,” from *ARTEP 7-8 DRILL*, “is to produce combat ready units that respond rapidly to known or suspected enemy activity and defeat the enemy. Battle drill training is a key factor in achieving that goal.” Our current training doctrine provides the necessary framework for effective drill training. Leaders must know the drills found in doctrine and identify which individual tasks support them. Leaders must know how their collective tasks relate to the company’s collective tasks,

especially those that are mission essential. Existing manuals make this job of “cross-walking” the relationship of tasks easy for anyone who understands how to use them. Only by first knowing what must be trained at every level can the leader then develop a training strategy for the unit as a whole.

A unit must develop a thoughtful training strategy. The unit’s training strategy should allow the NCO chain to develop individual skill proficiency of tasks which support unit drills. During the “crawl” stage, sand tables, terrain models, and walk-throughs are easy means of ensuring complete understanding of the mechanics of drills. These means allow the leader to not only assess subordinate understanding but also to start introducing conditions of enemy and terrain that will lead to variations of a given drill. Platoon leaders, it is your job to ensure your sergeants train proficiency on individual skills, and it is your job to develop crew drill training plans. The –10 Operator’s Manual, *FM 17-12*, and *FM 17-15 MTP*, and the assistance of your platoon sergeant and company master gunner should get you there. As the unit progresses, it should employ the principle of multi-echelon training. This is an efficient means of training related individual and collective tasks simultaneously. The development of training “lanes” is a logical first step. An essential benefit from this training is that it allows everyone in the unit to understand how the tasks they trained relate to other unit activities and boosts leader confidence that these tasks will occur without continuous personal involvement.

Effective drill training requires a unit to execute drills under varying conditions and with the pressing demands of a tactical mission. If a unit trains drill execution outside the context of a tactical mission under realistic conditions, i.e., in a vacuum, then it is practicing only the reactive purpose of a drill and not its more fundamental purpose of regaining the initiative. Our tank and Bradley firing tables are examples of where we often lose the opportunity to integrate realistic tactical play. Lane training is great, but not sufficient. Company commander, do not fail to take the next steps in training progression. The unit must not simply do things right, it must also do the right things in the context of a mission involving other forces. A platoon trains its collective tasks best when it is training with other platoons and reacting to a company commander who is in turn a tactical player. Battalion commander, if you want “killer platoons,” then you had better deploy the battalion at some point; and if your battalion is training in simulations,

make sure you are an active player. Likewise, effective crew training ultimately requires company operations. The challenge is that units infrequently deploy for training as companies and task forces in the existing resource-challenged environment. Simulations and virtual reality can assist but only if brigade and battalion staffs and commanders assume the active player role necessary to maximize such training. The synergistic effect of a task force cannot be realized simply by bringing together crews and platoons. It doesn’t matter if they are superbly trained to execute battle drill.

The development and internalization of unit standard operating procedures are essential to battle drill execution. The drills that a unit may have to do are by no means entirely captured in existing doctrine, nor does doctrine dictate how to execute battle drill for every unit’s unique situation. This is the domain of a unit’s SOP. An SOP or operations order need not address every possible contingency. The types of contact are actually finite: direct, indirect, visual, air attack, and NBC. An SOP or order that addresses when and where these actions are most likely and the specific plan to react is an achievable goal.

The rehearsal is then a vehicle for synchronizing the individual, crew, and unit actions for each. Commander, if you do not want an SOP that serves its best purpose as a petroleum product absorbent at the bottom of the left stowage bin, then develop it as a result of and concurrent with the ongoing training experience. A useful SOP, one that your soldiers know and apply, is relevant to more than the individual who typically writes it prior to a major exercise.

So far, I have stated that leaders must understand the purpose of drills, train their execution thoughtfully, and then must anticipate their execution in a given tactical situation. Effective drill execution also requires that the leader communicate his “vision” of the drills that he anticipates. This vision must be conveyed in terms of the terrain and relation of forces where it will possibly occur. The same terrain boards and sand table tools used in training are also useful in conveying this vision. Sketches are also a useful complement to the leader’s verbal description of the battle drill. The logical time in an operations order to address battle drill execution is in coordinating instructions, a sub-paragraph of which should always be “actions on contact.” The most critical battle drills, those during the decisive action, can be emphasized by addressing them as part of actions on the objective or actions in the engagement area.

An example of how one tank platoon leader conveys part of his “vision” will further illuminate the discussion at this point:

“Again, we are the lead platoon along AXIS RAY to PL MANTA. 1st Platoon, with the commander, will LD following us on the right with 2nd Platoon following on the left. Along AXIS RAY is the templated combat outpost with two BMPs and around 12 dismounts forward of Hill 114. We will be in a wedge formation using traveling overwatch. We will attempt to destroy this COP using contact left as we maneuver along the low ground to the east. If we must transition to bounding then A Section will deploy in an ABF while B Section bounds past us to CP 5 to the east with the planned support of a suppression fire mission which I will initiate. If bypass appears impossible, then B Section will deploy on my right flank and I will request that the company commander designate us as the fixing force for the movement of the remainder of the team to OBJ MAIN.”

This excerpt from a platoon operations order, while simple, represents the type of planning and communication that is all too often lacking, according to observers at our major training centers.

No amount of technology and digitization is going to reduce the importance of battle drill in the foreseeable future. Training drill to standard continues to be a priority for most units. We cannot rise above the current deficient state of battle drill proficiency, however, unless we train it right. Leaders must gain an understanding of the purpose of drills, train them in a smart way, and communicate their execution effectively. Given a tactical mission, leaders must further apply the planning, preparation, and execution of battle drills to the relation of enemy and friendly forces as arrayed on the terrain. Drills are our bread and butter. They are what sergeants, lieutenants, and captains are paid to do well.

MAJ Kevin Wright is currently serving as the plans officer for the Chief of Armor. Prior to this, he served as the S3 and XO in the 19K OSUT battalion. He previously was the TRADOC Liaison to the Israeli Defence Forces and has been an Infantry Advanced Course small group instructor and an NTC observer-controller. He served in tank units at Fort Hood, Texas, and in Germany, to include duty in Desert Shield/Storm.

TACTICAL VIGNETTE 00-01

Ragin' Cajun Time — Platoon Leader's Decision



Overall Situation

Enemy Situation:

A battalion (-) size element of the Chafenburg Army is moving south along the border of the nation of Dansu. Heavy fighting has attrited them to 70% strength. They are looking for a favorable location near the capital or a surrounding town from which to conduct an insurgency. They are equipped with 6 - 9 x T-72s, 22 - 25 x BMP-2s with infantry, and 2 x 2S3s. They have the ability to employ non-persistent agents, although none have been used as yet. Their most probable course of action is to invade the southern portion of the border somewhere between grid 2310 and grid 2301. Their doctrine dictates that they first send their reconnaissance across to find a suitable avenue of advance (this element may be split into two sections). Expect to see at least two tanks and five BMPs along with a minimum of one EN vehicle in their reconnaissance element.

Friendly Situation:

As part of Operation Steel Fist, the 1 BDE has deployed to the desert nation of Dansu and successfully repelled a border insurgency by the Chafenburg Army. TF 6-46 is currently consolidating and reorganizing west of the capital. As the most southerly deployed unit of the 1 BDE, they have been alerted. The TF commander orders a company-size force to conduct security operations in the vicinity of the border.

Company Situation:

You are the platoon leader of 2nd Platoon, Alpha Team (task organization: Company HQ, 1st Platoon, 2nd Platoon, 3rd Platoon, and FIST). Your company has priority of fires. Alpha Team is at 100% strength and has just finished

conducting a relief in place of Charlie Team. After Bravo Company finishes refueling, the TF will continue to march to the border for further operations. One section of scouts (2 x HMMWV) is forward of your position screening at vicinity MR250060 and MR256060. Charlie team is held in reserve to be the spearhead of the TF counterattack.

Company Mission:

Team A/6-46 AR defends vicinity BP 1 NLT 230900MAR00 in order to prevent enemy forces from penetrating the task force rear boundary (PL Apache). O/O, establish an SBF vicinity SBF 2A to secure the flank of the task force while it conducts a counterattack.

Platoon Situation:

Your platoon is moving toward BP 1 when you receive the following transmission: "Guidons, this is Black Six, frago

follows." All elements acknowledge. Six then sends "Scouts report three BMPs followed by one T-72 vicinity AA 2 moving east vicinity MR235047."

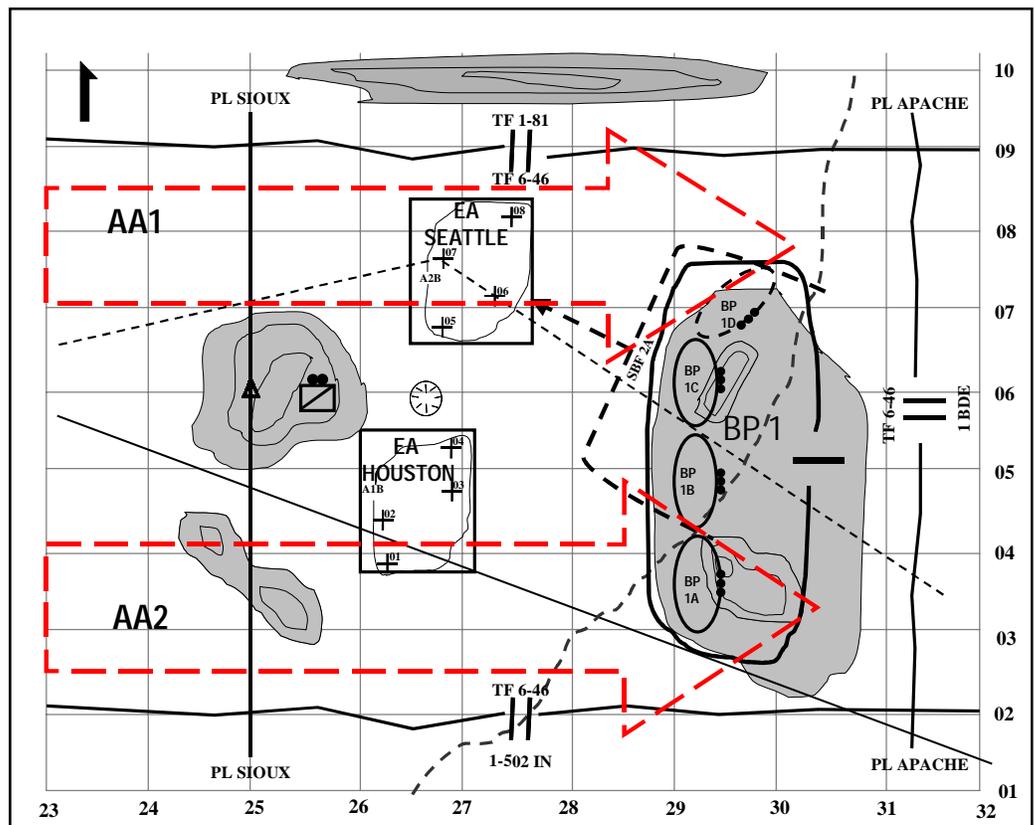
Red: Occupy BP 1B and orient on EA HOUSTON from TRP 1 to TRP 4. On order, shift fire to EA SEATTLE orienting from TRP 5 to TRP 6.

White: Occupy BP 1A and orient on EA HOUSTON from TRP 1 to TRP 3. On order, displace and reposition to BP 1D and orient from TRP 7 to TRP 8.

Blue: Occupy BP 1C and orient on EA HOUSTON from TRP 2 to TRP 4 and EA SEATTLE from TRP 5 to TRP 8.

Trigger is three tanks or four BMPs (the FSE) in either EA.

Continued on Page 45



Solution — Tactical Vignette 99-04

Trouble for the Redball Express - Rear Area Security
(From the September-October 1999 issue of ARMOR)

Author's Solution

EVENT #1

The sniper attack on TF 1-23 is clearly an example of a level I rear area threat. The local commander was able to deal with the threat with the forces available and the situation requires no immediate response from the brigade commander. He should however, direct the staff to:

- 1) Update the IPB with a special emphasis on likely ambush sites along the BDEs MSR. Include an assessment of the degree of support for partisan and SOF forces in each of the urban centers in the BDE AO.
- 2) Vary the use of MSRs, LRPs, and the timing of LOGPACs to avoid setting predictable patterns.
- 3) Direct MP platoon to proof MSR prior to major convoy movements.

EVENT #2

The enemy contact vicinity of the BSA is more than the FSB can effectively deal with. They can prevent penetration of their perimeter but are unable to mount an attack that will destroy the enemy mortar location. While the situation does not warrant the commitment of a combined arms formation, this level II threat does require action by the brigade.

“Guidons, this is Rubicon Six, Frago follows, acknowledge over.”

Situation: The BSA is in contact with a dismounted infantry squad and light mortars located in the hills to their south (grid 047193). Friendly forces continue to defend the BSA perimeter and have no forces south of the 195 east-west gridline.

Mission: No change.

Execution:

Tasks to subordinate units:

- 1) MP platoon OPCON to FSB. Neutralize enemy squad vic grid 047193.
- 2) FSB maintain contact with enemy squad. Provide sup-

pressive fires on enemy squad in support of MP platoon's maneuver.

- 3) FA switch priority of fires to FSB.

Coordinating instructions:

- 1) Report when link-up with MP and FSB is complete.

Service Support:

- 1) FSB provides medevac support to MPs.

Command and Signal

- 1) Signal to lift fires is green star cluster.

ACKNOWLEDGE over.

EVENT #3

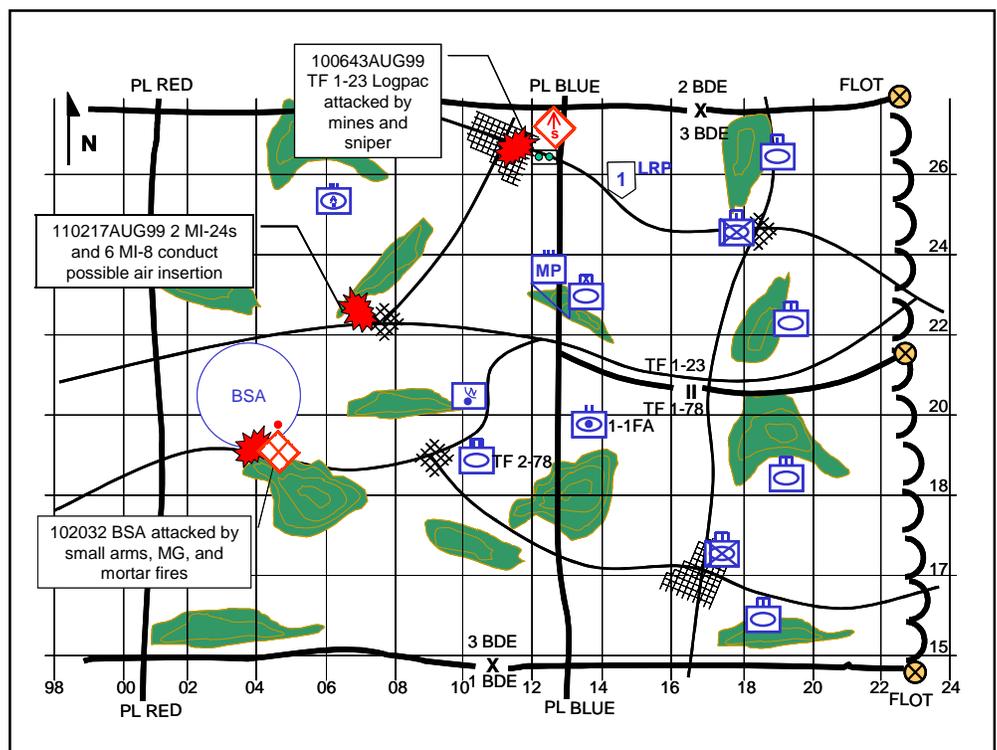
The insertion of an infantry force, which is potentially as large as 120 soldiers, in the BDE rear presents the commander with a Level III threat. The MP platoon certainly does not have the capability to defeat the threat and probably couldn't fix them with much success. So where does the BDE CDR get a combined arms

formation capable of dealing with the situation? Commitment of the BDE reserve is certainly an option, but could leave them out of place or without sufficient combat power to be decisive in the close fight. The enemy appears to have committed to a course of action that supports his maneuver in the center of the brigade sector. A more logical choice to deal with the threat is the mech team providing security to the high value FA assets.

“Guidons, this is Rubicon Six, Frago Follows, acknowledge over.”

Situation: At 110217AUG99 conducted an air insertion of a company-sized unit with 2 MI-24s and 5 MI-8 Hips vic grid 070225. 1 MI-24 and 1 MI-8 were destroyed. I believe the enemy infantry company will defend vic 078223 to block our MSR and hold key terrain in support of the enemy MID attack. His most dangerous course of action is a dismounted attack on the BSA.

Mission: No change to the brigade mission.



Solution (continued)

Execution:

Tasks to subordinate units:

- 1) 1-1FA, detach Team Mech and place them under brigade control. TM Mech consolidates his platoons at attack position Dog (vic 100205) and attacks to fix enemy infantry company vicinity grid 078223 in order to protect the brigade support area.
- 2) MP Platoon screens from grid 035240 to 085245 to protect MLRS platoon.
- 3) TF 2-78 provides mortar fires to Team Mech.

Coordinating instructions:

- 1) All units between PL Red to PL blue go to REDCON 1.
- 2) PIR; composition, location, direction of movement of suspected infantry company.
- 3) Establish a CFZ on BSA until contact with enemy company is established.

Service Support:

- 1) All logistics traffic uses southern MSR.

ACKNOWLEDGE, over.

Tactical Vignette 00-01

(From Page 43)

The trigger for any platoon to reorient its fires into an alternate EA is:

- Negative contact in primary EA.
- Confirmed enemy company (+) identified in the alternate EA.

Engagement priority is tanks, EN vehicles, BMPs, all other vehicles.

Displacement criteria for White: Three tanks vicinity EA SEATTLE.

I will move with Red. XO, you stay with Blue.

All other OPORD information has remained unchanged.”

Task 1:

Send the pertinent FRAGO to your platoon and occupy your position in BP 1.

Situation 2:

Your platoon sergeant sends you the following SPOT report: “White One, this is White Four. Observing one tank and one BMP moving northeast vicinity TRP 1, over.” As you attempt to send the information higher, you hear “Black Six, this is Blue One. Observing one tank and one BMP slowly moving northeast vicinity

TRP 1, over.” After thirty minutes, you hear, “Black Six, this is Red One. Contact, three tanks and two BMPs vicinity EA Seattle, out.” Red sends “Black One, this is Red. Fire TGT Group A2B, tanks and BMPs in the open.” Main gun fire to the north is audible from your position. Your attempts to contact Black Six and Black Five yield no results as they are sending information higher.

Task 2:

What actions, if any, do you take?

Requirements:

Readers wishing to submit solutions to the scenario should provide the following: 1) a sound FRAGO for your platoon and 2) the appropriate procedures and supporting rationale for the second situation. Send your solution by e-mail to BerkowitzA@fitknox5-emh3.army.mil or by mail to: Platoon Gunnery Doctrine Branch, ATTN: ATZK-TDD-PG, Fort Knox, KY 40121-5210.

Solutions to this vignette will appear in the May-June 2000 issue of ARMOR.

DEFINITIONS

Some readers unfamiliar with current Army abbreviations, such as those used in the accompanying tactical vignettes, have asked us to define them. —Ed

AO	Area of Operation	LRP	Logistics Release Point
BP	Battle Position	MLRS	Multiple Launch Rocket System
BSA	Brigade Support Area	MSR	Main Supply Route
CFZ	Critical Friendly Zone	OPCON	Operational Control
EA	Engagement Area	O/O	On order
EN	Engineer	PIR	Priority Information Requirements
FA	Field Artillery	PL	Phase Line
FIST	Fire Support Team	REDCON	Readiness Condition
FRAGO	Fragmentary Order	SBF	Support by Fire
FSB	Forward Support Battalion	SOF	Special Operations Forces
FSE	Forward Security Element	TGT	Target
IPB	Intelligence Preparation of the Battlefield	TRP	Target Reference Point
LOGPAC	Logistics Package		

LETTERS from Page 4

So far, Merkava has never been cross-tested with other tanks outside Israel. It looks like Turkey is the first nation to do just that. Let's wait and see how Merkava III rates against their requirements and against some other tanks. I am sure they will give it a better rating.

ALBERT KLENKE
Oberst a.D.
Sankt Augustin, Germany

The Place of Light Armor In the Army's Future

Dear Sir:

ARMOR, September-October '99, is a great issue. Lots of good "stuff."

Though I am, as a career infantry officer (mostly in light infantry formations), in tune with many of CPT Head's points in his article, "2 Para's War in the Falklands," (Cover story, September-October *ARMOR* – Ed.) I'd like to offer some food for thought.

Any infantryman would love to have the type of direct fire support the British 2 Para enjoyed, and on such a need I strongly concur.

Too often, however, I incorrectly label any tracked vehicle, no matter the armor thickness, as "armor." That label too easily equates to main battle tanks in the minds of even the most cautious of military commanders. Oh, how many times did I see the old 90mm self-propelled antitank gun (SPAT), with no armor, just an open gunner's station, used as a tank during training when I was a lieutenant in the 101st Airborne Division.

Fortunately, the British did not face any real armor, or the "light armor" they had would not have lasted but a minute. The British light armor was a tool available to the commander, and in the action CPT Head describes, the commander properly employed it.

We must make the needed warfighting available to commanders in the field. It is their duty to properly employ them, given their capabilities.

While on the subject of "light armor," a rhetorical question? Given the total spectrum of threats that today's Army must be prepared to face, why does the Army lack such a "tool" that our British cousins had the wisdom to put in their force structure?

From my porch, it seems that the Army is too hung up on the Abrams and the Bradley. I feel they are both great systems; they account for the credibility that the Army enjoys today, and they must be in the force for decades to come. However, today's threats seem to demand "light armor" a la the British. I am not talking about the 20T Fighting Combat Vehicle or the medium force vehicle (which are also needed... Applause to the new CSA), but something even lighter, say 8T to 12T, armed with a medium caliber cannon and perhaps a Javelin or two, protected against small arms

fire, and given commanders trained to properly employ it.

TY COBB, JR.
LTC (Ret.), Inf
Sparta, N.J.

Reviving the AGS For Future Army Missions

Dear Sir:

The level of protection needed by a highly mobile intermediate force that would quickly execute the enforcement of U.S. policy is a subject of great debate. The greater the protection, the slower the reaction to a fast-developing crisis. The arrival of a U.S. force that represents the global superpower, but that has an exploitable weakness, invites the temptation to win a short-term gain. Procurement of the keystone of this force would be a vehicle that can be rapidly deployed, protect U.S. forces from casualties, and be able to destroy any other vehicle or fortification. The decision makers have found themselves at a historical and critical crossroads.

The U.S. Armor Force has survived a turbulent and controversial past. Its decisions include the whole spectrum of the good, the bad, and the ugly — some of which still remain under historical review. (The recently released book, *Death Traps*, by Belton Cooper, gives excellent insight into the controversy between the M4 Sherman and the M26 Pershing.) The same factors were debated by the great leaders of the time, in the midst of a world war. The only new factor this time is the advancement in technology.

The great and almost superhuman efforts of the soldiers who fought against Tigers with grossly inferior Shermans are well documented and factored into the evolution of U.S. Armor to the point that no effort on the part of Iraq's armor force could stop the new King of the Kill Zone, the M1 tank. Desert Storm was a world lesson that, given the opportunity to move and emplace forces, we will crush you. Non-nuclear heavy ground combat is in a checkmate status. The ethnic cleansers, the land grabbers, and other assorted terrorist crackpots realize that they must do their dirty deeds in a short window of reaction opportunity. The United States intends to close that window with a check force that will only afford them two options: The first would be a costly and poor odds venture to attempt to overwhelm the check force. The second is to withdraw before the heavy checkmate force arrives and assures their annihilation. The only loophole that exists is the armor of the intermediate force. Can it withstand the weapons at the budget basement level? The answer is a simple fact. If it got there on wheels, "No!" I can go purchase a .50 cal. sniper rifle and stop it dead in the road. Worse yet, I can kill the whole crew. Add a few cheap anti-personnel mines around the vehicle and a world news film crew, and you have a live telecast of an American policy failure.

There is another option. It can be globally deployed in the same aircraft as our airborne forces; it can also parachute out the same door they do. In its weakest level of armor protection, a .50 cal. is no threat, anti-personnel mines are not life threatening. It can up-armor two more levels to a very high level of protection beyond all hand-held weapons. It has a devastating rate of fire and, with one round, it can kill any armored vehicle on the earth. Your enemies will be wondering, how did they get tanks here so fast! The universal world-wide opinion of all armies, including the most ragtag bands, is to treat that TANK and its weapon system with great respect. The Armored Gun System may look like a light tank, but has the heart of a lion and protects its cubs with equal ferocity. If they insist on dying for their cause, they came to the right place; if not, I guess it's time for diplomacy. The M551 Sheridan proved in Panama it could do what wheel systems cannot. When cars and trucks are used as hasty barriers, then tanks, even light ones, either crush 'em, drag 'em, or blast 'em.

1SG (Ret.) JOHN BITTAY
Pittsburgh, Pa.

Author Missed Good Sources In Scout-Colt Integration Story

Dear Sir:

In response to 1LT Brennan's article about Scout-COLT integration in the Brigade Recon Troop (July-August 1999 *ARMOR*, pg. 35), his points are valid. However, Lieutenant, you have made one of the biggest errors any professional military soldier can make... not following the lessons learned by those who served before us. You would not have had the growing pains you mentioned if you had used the power of the internet, the phone, or friends. The Center for Army Lessons Learned has numerous articles on COLT operations (I read 10 of them myself). You can go to the 1st AD/ID/CAV Division websites and pull up changes to doctrine which mention COLT operations (integration, communications...etc.).

One of your biggest assets are the two remaining Armored Cavalry Regiments (the 2d, based at Fort Polk, La., and the 3d, based at Fort Carson, Colo.). Although the missions of the ACRs differ from the brigade- and division-level missions, scouts are scouts (although the 19Ds from the ACRs excel more, in my opinion), Redlegs are Redlegs. These brothers in arms have been there and done that. In the future, we must all remember the lessons learned from all military operations, whether peacekeeping, MOUT ops, or all-out armored warfare in the desert. Those AARs we write aren't wasted ideas... they are utilized.

CPT ANDREW J. KAUFMANN
G3 Aviation
Fort Carson, Colo.

Armor, we will continue to aggressively pursue modernization upgrades to our M1 fleet as the dominant flagship of our full spectrum armored force. Meanwhile, we are on a path of scientific and technological research to achieve objective breakthroughs in lethality, survivability, deployability, and sustainability. I'll update you on this effort in future columns. Until and when we achieve this S&T breakthrough, the main battle tank is going to be required to ensure that we can win the nation's major theater wars.

The Chief of Staff of our Army has made a strong case for change. To achieve the required joint operational capabilities I discussed above and remain the world's dominant land force, the Army must develop new, adaptive and innovative capabilities. These capabilities must be built around full spectrum versatility, strategic responsiveness, and joint interoperability. The major theater war (MTW) requirement remains the most dangerous threat to our national security. However, small-scale contingencies (SSCs) have been and will continue to be the most frequent challenge the Army will face in the foreseeable future. One of the most daunting aspects of these future threat forces is their application of asymmetric tactics and technologies in urban and complex terrain to counter the technological and numerical advantages of U.S. joint systems and forces. As I noted, it is evident that our heavy forces are not rapidly deployable and lack the tactical agility and sustainability required for these missions. Our light forces, conversely, lack lethality, survivability, and tactical mobility. The Initial Brigade will be a rapidly deployable, full-spectrum, combat brigade with its organizational design optimized for small scale contingencies. In other words, it will fill the existing gap in Army force capability.

Throughout the development of the Initial Brigade, we have worked hard to define platform (vehicle) requirements that achieve maximum organizational effectiveness in both projection dominance and battlespace dominance. Simply stated, we want a common platform approach in the organization that achieves proper synergy between projection dominance requirements on one hand (deployability, sustainability, and MANPRINT) with battlespace dominance requirements (lethality, survivability, and mobility) on the other hand. A high level of platform commonality is essential to achieve the appropriate synergy between projection dominance and battlespace dominance. I'm satisfied that our analyses to date have effectively defined platform requirements that are in harmony with the brigade's organizational and operational concept and give us the best op-

portunity possible to optimize the organization's effectiveness.

Starting two months ago, we began communicating the platform requirements to business, industry and international suppliers. As you read this, a wide range of existing platforms are being demonstrated here at Knox to see how they perform in conditions that closely replicate the operational environment envisioned for the Initial Brigade. The demonstration includes each of the dominant brigade platform requirements for a mobile gun system, infantry carrier, ATGM platform, and reconnaissance platform. The ability of available platforms to be adapted for other requirements in the Brigade — engineer, CSS, C2, etc. — are also key objectives. Company grade officers and NCOs from the force are operating the equipment and communicating directly with industrial leaders the need for adaptation and technology insertions to meet requirements.

The bottom line for this demonstration is to ensure that the Army gains an understanding of the platforms (and their off-the-shelf capability) that are currently available to meet the Brigade's near term requirements, while precisely communicating adaptability and technological insertion requirements to the suppliers of the platforms.

Following the performance demonstration at Knox, the intent is for the Army to initiate a formal competitive acquisition process that will culminate next summer in procurement decisions regarding appropriate platforms for fielding. Again, the performance demonstration at Knox is an opportunity for an open two-way communication process regarding platform requirements. One more point — absolutely no decision has been made regarding a wheel or track drive train. We'll let the analysis and force effectiveness requirements lead us to the right solution.

The Brigade's RSTA squadron is designed to give the brigade commander high levels of situational understanding throughout the Brigade's battlespace. Its O&O describes a unit optimized for multi-dimensional reconnaissance and surveillance operations in small-scale contingencies operating in complex and urban terrain. Over the years, our doctrine has been based on an operational context that involves making contact, developing the situation, then maneuvering for decisive combat. The RSTA is designed within the Brigade's structure to dominate situational understanding and provide the opportunity for the commander to first develop the situation, maneuver out of contact, then make decisive contact to defeat the enemy at a time and place of his choosing. The

RSTA squadron is designed to provide high quality information and knowledge concerning the widest array of threat conditions common to small scale contingencies, including: conventional and unconventional enemy forces, terrorists, transnational groups, paramilitary/police organizations, political groups, organized criminal groups, etc. In its primary role of reconnaissance and surveillance, the squadron orients on the area of operations and the threat, vice solely on the main body of the friendly force. This is an exciting and powerful reconnaissance and surveillance organization with the capability to dominate situational understanding within an area of operations for the brigade commander, thus ensuring the Brigade's mobility and freedom of maneuver prior to contact. As TRADOC's lead agent in developing the RSTA squadron, we at Knox will work hard to ensure the organization achieves its O&O objectives across the DTLOMS.

In the next Commander's Hatch, I'll describe the brigade's mobile gun system requirement as well as battalion scouts and the C4ISR issue. Additionally, I'll lay out how we envision the brigade operating in major theater wars side by side and integrated with the big five.

We expect this whole body of ongoing work will lend itself to parallel efforts to review the force effectiveness of the 2nd ACR and to relook the requirement for an armored gun platform in support of the 82nd Airborne Division. We are addressing both of these issues now.

We have an incredible team of truly professional military and civilian leaders here at the Armor Center working tirelessly to turn visions, guidance, and opportunity into reality. I am very proud of all these great soldiers and civilians and can assure you they will do their part to produce trained soldiers, effective organizations, great equipment, and doctrine and TTPs to meet your needs into the 21st century. The Initial Brigade is exactly the right force to meet a very challenging requirement for our warfighters and we are naturally enthusiastic about meeting the crucial responsibilities of the Armor and Cavalry Force associated with this tremendous initiative. I'll keep you posted and look forward to an exciting and energetic dialogue. I would ask that you give us your thoughts and insights through any forum as we all work to field this important addition to the Army's suite of capabilities.

Forge the Thunderbolt and Strike First!

MG B. B. Bell
Thunderbolt 6

TIGERCOMP IV

*Top Marine Corps Tank Crews
Test Their Skills at Fort Knox*

by **Second Lieutenant Charles Day**



A Marine Corps Reserve tank crew representing the 4th Tank Battalion, 4th Marine Division (R) won the TIGERCOMP gunnery competition between top crews from active and reserve Marine tank units.

The best Marine tank crews from across the country converged on Ft. Knox October 16th for the 4th annual USMC Tank Gunnery Competition, commonly known as TIGERCOMP, which is held to determine the "Top Crew" from the Marine Corps' four tank battalions.

The gunnery competition is sponsored by the 4th Marine Division. COL James M. McNeal, who is currently the Deputy for Operations, Marine Forces Atlantic, and LTC Jeffery L. Williamson (USMC, Ret.), one-time commander of the Marine Corps detachment, Ft. Knox, are credited with the idea for TIGERCOMP, which was adopted as an annual event in 1996 by the commanding generals of the four Marine divisions.

According to the Marine Forces Reserves PAO, the purpose of the competition is to emphasize and reward excellence; enhance *esprit de corps* among Marine tank units through camaraderie, competition, demonstrated proficiency, and shared experience; and demonstrate the warfighting capabilities of the total force Marine Corps as an integrated fighting force.

TIGERCOMP, characterized by fierce competition, tests a tank crew's decision-making abilities, communication, technical proficiency, and cohesiveness while conducting a Tank Table VIII. In addition to the tank crew contest, this year's event included an antitank competition as four crews from Marine TOW (tube-launched, optically-tracked, wire-guided missile) platoons fired HMMWV-mounted TOWs at targets simulating enemy tanks on Yano Range.

Four tank crews participated in the gunnery event. Active Component tank crews

from Bravo Company, 1st Tank Battalion, 1st Marine Division, 29 Palms, Calif. and Delta Company, 2nd Tank Battalion, 2nd Marine Division, Camp Lejeune, N.C., as well as Reserve Component crews from Charlie Company, 4th Tank Battalion, 4th Marine Division, Boise, Idaho and Charlie Company, 8th Battalion, 4th Marine Division, Tallahassee, Fla.

The top tank crews from their respective battalions arrived at Ft. Knox the 11th of October, drew their tanks lottery style, and worked feverishly throughout the rest of the week to prepare for the main event. Training and crew preparation, however, began long before arrival at Knox. Each tank crew competed in company and battalion gunnery densities as early as May, and, in some cases, defeated up to 53 other tanks in order to earn the right to compete for TIGERCOMP top honors.

Such an event provides interesting challenges for the reserve components, who must spend hours of their personal time training in order to be at their best. SGT Blake Slater, a police officer and student, discussed the added challenge, saying that "it is difficult to get together around work and school schedules. We have to work extra hard at drill and during the time we do have." Although winning is important, and was clearly on the minds of all participating crews, the competition seems to do more than merely present an award and provide publicity. It focuses training and elevates the skills of all soldiers involved, from master gunners, mechanics, and range OICs, to the tank crews themselves. Perhaps one of the more remarkable hidden traits this competition offers is a reason, a challenge if you will, for reserve units, whom we rely more and more on these days, to ensure that they are capable of executing at the same levels as their active duty counterparts. Alternately, active units push themselves to continuously raise standards. A win-win situation.

TIGERCOMP '99, on a perfect fall Saturday, boasted a full grandstand of spectators to watch and listen (a loudspeaker system let them hear each crew's internal net) as each tank conducted its run. In addition to the individual competitive lanes, the event featured all four tanks in a Tank Table XII. This combined effort provided the audience with an impressive display of fire and maneuver capabilities.

After all of the smoke had finally cleared, the tank crew from 4th Battalion, 4th Marine Division (Reserves) emerged with top honors. During an awards ceremony following the competition, guest of honor Brigadier General John A. Gallinetti, Deputy Commander Marine Forces Reserves, addressed the participants and audience congratulating the crews on their hard work and achievements in coming this far. "The competition was fierce and the margin of victory was very close." General Gallinetti also touched on the issue of active and reserve units operating together, an issue which all branches of service face. "One of the greatest attributes of this event is that you saw a total force display, both reserve and active duty crews executing so close that you couldn't tell them apart."

The winning tank crew from Company C, 4th Bn, 4th MarDiv received the Navy/Marine Corps achievement medal, as well as the privilege of holding the McCard trophy and plaque (named for Gunnery Sergeant Robert H. McCard, Medal of Honor recipient) until next year's competition. The top crew consisted of CWO2 Myron C. Severson, Jr., tank commander; SGT Blake A. Slater, gunner; Lance CPL Donald G. Crowell, loader; and Lance CPL Matthew K. Shriver, driver.

2LT Charles Day received his Armor commission from Kansas State University ROTC in December 1998. Currently attending AOB, his first duty assignment will be in Germany.

Bradley: Another Quality Addition To Hunnicutt Series on American Armor

BRADLEY: A History of American Fighting and Support Vehicles by R.P. Hunnicutt, Presidio Press, Novato, Calif., 1999, 470 pp., \$90.

For many years, Dick Hunnicutt has been publishing authoritative, profusely illustrated histories of the development of American armor, well mounted hardbound references that are on bookshelves all over this Army and probably in many others.

An engineer who served as an infantryman in World War II, his books set a very high standard in many ways. His photographic documentation closely follows the details in the text, and the photos selected are clear and well reproduced on heavy, glossy pages. The books themselves are large format, strong enough to stand up to years of frequent use, and reflect very high quality in every detail. This is no-compromise production by a real perfectionist (his first volumes were self-published and barely broke even, he says), and they are well worth their considerable cost.

The title of this volume, like some of Hunnicutt's others, is somewhat misleading. The title focuses on the Bradley, but the first mention of the Bradley in the text does not come until about page 280. More accurate is the subtitle, which begins to give some hint of the broad coverage attempted here. The chapter headings reflect the variety of tracked vehicles covered: personnel and cargo carriers, command and reconnaissance vehicles, high-speed tractors, low ground pressure vehicles, fire support vehicles, specialized tracked vehicles for engineers, maintenance teams, anti-tank sections, and chemical warfare teams, Marine landing amphibians, and infantry and cavalry fighting vehicles.

After an introduction by MG Stan R. Sheridan, a key figure in the development of the Bradley, the text begins as the Armor Branch began...in World War II. Hunnicutt describes the early approach to armored troop carriers — the halftracks — and their limitations in terms of mobility and troop protection. He recounts the British and Canadian efforts to develop improvised, fully-tracked troop carriers from obsolete tanks and SP guns. The move toward fully-tracked vehicles, spurred by the Allies' losing battles with General Mud, led to a remarkable assortment of solutions, some of which you may have never heard of. Willys built a *tracked Jeep* for Canada, for example. This reviewer was also amazed at the number of fully tracked high speed tractors developed to haul heavier and heavier artillery pieces

over difficult terrain. When one thinks of tracks, one thinks of tanks, and this is far too simple an approach. Tracks made many specialized vehicles mobile enough to go to war.

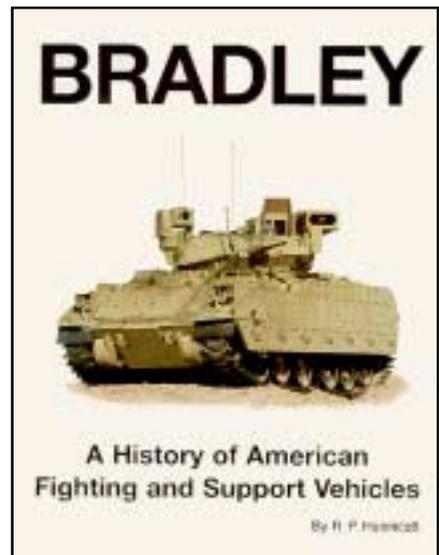
After World War II, the Army began the development of dedicated armored personnel carriers, fully tracked "battle taxis" originally developed on light tank chassis and the high-speed chassis of the M18 Hellcat tank destroyer. But the M75 that emerged was considered too expensive, and it was followed by the T59 and others, culminating in the M113 series that is still in use today. While tracing the development of these APCs, the author also branches off to discuss special purpose variants, like mortar carriers. In service with so many armies for so many years, the M113 series has been developed in an amazing number of variations. Typical of the author's comprehensive approach, there are pictures of each variant mentioned in the text, including turreted versions that utilize major caliber gun systems developed overseas.

The section on command and reconnaissance vehicles is particularly interesting, considering the fact that we are once again in a development cycle to build a new scout vehicle. It is sobering to see how many different approaches have been taken in this pursuit, wheeled and tracked.

The following chapter, on infantry and cavalry fighting vehicles, traces the development of another M113 variant that came to be called the ACAV, or Armored Cavalry Assault Vehicle. Originally developed by the Vietnamese after receiving M113s from their American allies, we adopted the idea, and created gunshield kits that improved upon the originals. In the hands of units like the 11th Armored Cavalry Regiment, these improvised battlewagons acted passably well in the role of light tanks.

At the conclusion of this chapter, the author explains the early history of attempts to build an infantry and cavalry *fighting* vehicle, with a dedicated, turreted armament that supported the infantry and cavalry soldiers it carried. This leads up to the development of the Bradley, a chapter that also includes many of the prototype efforts to improve the Bradley's armament, adopt it to air defense, and use it to carry and fire missiles. The author also explores the Bradley-chassis variants, like the MLRS carrier and proposed ambulance, command and control, and logistics versions.

The next chapter covers a family of vehicles less familiar to Army readers than their Marine counterparts, the tracked landing amphibians. This 40-page chapter traces their develop-



ment from the primitive "Alligators" of WWII to the many variations of amphibians used today.

In summary, it is true that a \$90 book is an expensive book for most of us. But they say price is what you pay and value is what you get, and the value here is impressive, indeed.

JON CLEMENS
Managing Editor

THE RIVER AND THE HORSEMEN: A Novel of the Little Bighorn by Robert Skimin, Herodias, Inc., N.Y., 1999, 364 pp., \$26.

While the outcome of this historical novel is never in doubt, the author's approach to telling the oft-told story of George Armstrong Custer and the troopers' of the 7th Cavalry's C, E, F, I, and L Companies ride into annihilation and history in southern Montana on the 25th of June 1876 is different and well worth the read.

Skimin's story is about the people on both sides of the battle — soldier, Indian, and civilian — and their individual stories as told through the author's eyes, and woven into a complete fact and fiction tapestry leading ever directly to that fateful and tragic day in June 1876. It is obvious that the author has done his homework, both on the ground in southern Montana, and with the lives of the well known and not so well known participants on both sides of this preventable tragedy.

Skimin's writing gives meaning and understanding to the day-to-day good life of the plains Indians — their customs, religion, loves and hatreds, and the warrior's absolute belief in personal invincibility over the hated Long Knives. The author explains the need for mutilation of an enemy to "steal forever the enemy warrior's power;" but at the same time mentions how the Indians showed compassion for a fearless enemy, as in the case of the non-mutilation of Custer's body. Skimin paints a pretty good picture of the tough life in the post-

Civil War western Cavalry — not your typical Hollywood John Wayne Cavalry; but one of long days, weeks, and months of boredom, lack of supplies and equipment, few promotions, low pay, heavy drinking, whoring, and moments of hard fighting for the honor of the regiment, the company, and fellow troopers. Insight is given into the extended Custer “Royal Family” of intimate friends and family serving in the 7th Cavalry — two brothers, a brother-in-law, and a nephew died with him. The author also explores Custer’s ego, his complete lack of fear, and his reckless drive to win a great victory, national acclaim, and promotion to general officer rank.

Throughout the book, the author has used actual known incidents to develop fictional characters and background that otherwise would be difficult to portray. As an example, it is a fact that an Indian with a high-powered Sharps rifle fired into Reno Hill on the south east end of the battlefield, causing casualties from as far away as 700 yards. Using this incident as a base, Skimin skillfully develops a fictional Hunkapapa Sioux warrior and traces his development to warrior status and his fictional interface with Sitting Bull, Gall, and Crazy Horse up to and throughout the battle. Sitting Bull’s god-like persona, influence, and impact on all the tribes is skillfully described. “Custer’s Luck” is emphasized throughout the book; but little is said of “Custer’s Folly” other than in passing — such things as his turning down General Terry’s offer of four companies of the 2nd Cavalry so as to assure that the coming victory would be purely a 7th Cavalry affair; his rejection of four “cumbersome” Gatling guns; the splitting of his force twice during the battle (the premature commitment of Reno across the Little Bighorn River and Yates and Smith’s F and E Companies down Medicine Tail Coulee); or his failure to listen to and properly use his scouts. When it was all said and done, the reader is clearly exposed to how Custer’s eagerness to box in the hostiles overshadowed his judgment and caused a piecemeal commitment of his force, leaving him with insufficient combat power to counter the surprisingly overwhelming Indian force. In the end, Custer is portrayed as realizing his folly, but still completely surprised by the size and ferocity of the hostile force.

The author’s description of the Custer part of the battle, where there were no survivors other than hostile Indians, is brief and in keeping with the official scenario of the battle. Having just recently visited and extensively walked the battlefield, I am convinced that there may be other plausible scenarios of how the Custer part of the battle progressed and ended. But that is another story for other students of Custer lore to pursue. Suffice it to say that Skimin has spun a yarn with substance and historical credibility that is well worth reading by Custer buffs, students of the Cavalry of the West, and by folks just looking for a good story on a cold night.

STAN R. SHERIDAN
MG, USA (Ret.)

Chronicle of the 7. Panzer-Kompanie, 1. SS-Panzer Division “Leibstandarte”
by Ralf Tieman, Schiffer Publishing Ltd.,
Atglen, Pa., 1998, 298 pp., \$29.95.

The *Chronicle of the 7. Panzer-Kompanie, 1. SS-Panzer Division “Leibstandarte”* is an interesting look at the organization, employment, members, and events in the life of a small unit during World War II. The author held several command and staff positions in the 1st SS Panzer Regiment, including command of the 7th Company during its formation and again during the Battle of Kursk. This book is a great companion to the many unit and campaign histories currently available. It is of particular note since it presents the view from “the other side of the hill” and covers some campaigns that are frequently not covered by books generally available in the United States. The 7th Company also played a part in the notorious Malmédy Massacre as part of Kampfgruppe Peiper; the author covers this event and the subsequent trial following the war. The book is well written though it suffers from some editing problems. The *Chronicle of the 7. Panzer-Kompanie, 1. SS-Panzer Division “Leibstandarte”* is a valuable addition to any library and well worth the price.

The 7th Company was originally formed in Wildflecken in 1942 with the 1st SS Panzer Regiment. Many readers will recognize pictures of the barracks at the Wildflecken Training Area. The company was initially equipped with a mixture of Panzer IIs and short-barreled Panzer IVs. After completing training in Germany and France, the company was re-equipped with the long-barreled 75mm Panzer IV and sent to Russia in February 1943, where it participated in the Battle of Kharkov. Following their first action and losses at Kharkov, they assimilated replacements and conducted intensive training in preparation for Operation Citadel, the Battle of the Kursk Bulge. The company participated in the Battle of Kursk, taking part in the largest armor battle of the war at Prokhorovka. During the course of the battle, the company destroyed 79 enemy tanks while losing only two of its Panzer IVs totally destroyed. The company was then transferred, along with the rest of the division, to Italy to assist in disarming the Italian Army. The company returned to the Russian Front at the end of October and participated in defensive battles in the vicinity of Kiev, and later in the relief of the Cherkassy Pocket. During the battles for the Cherkassy Pocket, the company lost most of its combat vehicles. Subsequently, during the Soviet offensive that resulted in the encirclement of the 1st Panzer Army at Kamenets-Podolsk, the company was forced to conduct a dismounted defense of their assembly area against a Russian tank attack. Members of the company also had to fight as infantry during the breakout from the Kamenets-Podolsk Pocket. The company transferred with the division to the west, where they received new equipment and replacements. They fought in Normandy, including Operation Goodwood, and the Mortain Counterattack. Following the breakout from Falaise,

they were again reconstituted and participated in the Ardennes offensive. The company was part of Kampfgruppe Peiper, and some of its members were involved in the Malmédy Massacre. The company sustained heavy casualties in the Ardennes and was merged with the remaining Panzer IVs of the 1st SS Panzer regiment to form a composite panzer regiment. They then participated in Operation Spring Awakening in Hungary and the subsequent withdrawal through Austria. The company marched along with the rest of the Leibstandarte as a unit into captivity on 12 May 1945 in Mauerkirchen, surrendering to the Americans.

One of the strengths of this book is that it provides a glimpse into events and allows the reader to see the enemy as individuals rather than a faceless mass. In this respect, readers will find it comparable to American small unit histories. Not only do you read about the combat actions of the unit, but also some of the routine of army life — the daily administrative requirements, setting up training programs, assimilating replacements, the usual routines that all soldiers will recognize.

The company also participated in some lesser reported combat actions. An example is the final offensive in Hungary and withdrawal into Austria in 1945. The Leibstandarte was a shell of its former self, the panzer regiment no longer fielded battalions, rather an ad hoc combination of tanks into two companies, one of Panthers and one of Panzer IVs, reinforced by the remains of the 501st SS Heavy Panzer Battalion. Following the failed offensive in Hungary, the Germans retreated into Austria, the 1st SS Panzer Division was fighting on its home ground for the first time. The *ad hoc* panzer regiment had been reduced to individual vehicles supported by various groups of soldiers. Soldiers and civilians continued to resist the Russians to their utmost to protect their villages and allow the population to escape the Red Army. In one particular case, two young ladies volunteered and served as panzer crewman. The SS men found uniforms for the two girls, trained them to operate the weapons, and the girls helped defend their village against the Russians. When the company retreated, the girls chose to remain behind and continue to protect their homes. Another example is the extraordinary efforts the company and division exerted in order to surrender to the Americans, literally a race to beat the Russians to the crossings over the Enns River — a race that parts of the division did not win. A search of the Enns River crossing sites would probably yield a cache of disposed weapons including the last of the unit’s panzers.

The 7th Company had seven members convicted for their roles in the Malmédy Massacre. The author, Ralf Tieman, a former commander of the 7th Company, contends the prisoners were shot as a result of continuing attempts to escape. He focuses primarily on the process that the American prosecutors used to elicit confessions and testimony against the accused members of the com-

pany. While the author does not deny that there were members of the company present at the site; neither does he adequately deal with the event. The reader must be wary not to accept this version as the definitive account of the massacre and subsequent trial. The fact remains that soldiers of Kampfgruppe Peiper killed 79 American soldiers at the crossroads of Baugnez.

A continuing problem with books published by Schiffer is inadequate editing. This book is no exception. A typical example being the use of "concern" instead of Kasserne or barracks. While the editing can be distracting, it does not significantly diminish the quality of the book.

Chronicle of the 7. Panzer-Kompanie, 1. SS-Panzer Division "Leibstandarte" is an interesting book that covers the organization, combat operations, and demise of a small unit. As mentioned previously, the book describes the company's actions in many pivotal campaigns as well as some that are less well known. It gives a personal glimpse into the daily life of a tank company both in and out of combat. It provides interesting insights into the last days of the German Army and helps explain why it continued to fight fiercely up to the very end. It is well written and extremely readable, appendices provide lists of awards received by each member of the company, casualties, maps, and texts of key documents. In spite of the editing problems mentioned, it is well worth the price. I recommend it to all students of mounted combat operations and particularly those interested in the German Panzer Corps.

ROBERT A. NELSON
MAJ, Armor
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Spearheading D-Day: American Special Units in Normandy by Jonathan Gawne, Histoire & Collections, Paris, 1998; 288 pp. with photos, illustrations and maps; price \$49.95 (ISBN 2 908 182 793).

Advantages: Great companion book to the histories of D-Day; fascinating detailed explanation of what it takes to mount a full-fledged invasion!

Disadvantages: Probably very hard to find

Rating: Highly Recommended

Recommendation: For all historians and modelers

Most of us grew up with the movie *The Longest Day*, based on the Cornelius Ryan book, which told in a then-new *cinema verite* style the story of the D-Day landings and all that they entailed. Later, other books were found and read, such as works by Charles B. McDonald and Stephen Ambrose, which detailed even more of the events of that day and its aftermath. Then came the 50th Anniversary in 1994, and finally, the moving film *Saving Private Ryan* in the summer of 1998.

This book — which went to press in October 1998 — is a fascinating companion work to all those mentioned above. Unlike others, which cover what took place during the invasion, and when the key decisions were made, this one shows how and why things happened the way that they did. Illustrated with a tremendous number of crisp new photographs — most taken by the photographic units that accompanied the landing forces through training and embarkation — the book contains nicely done maps and schematics of the formations described. The author, who is an American living in Framingham, Mass., has been helped by a number of French historians and reenactors in putting this book together.

The chapters cover nine basic areas: the Assault Training Center, which worked out the "bugs" of landing troops; the US and British landing craft, which were developed and used to put the troops ashore; the initial assault troops and their functions; Naval beach clearing and preparation parties; regimental combat teams and attached units; Ranger and Marine units; Naval Beach Battalions and their work; the Engineer Special Brigades and their functions; and the Seabees and port installation and operating personnel who kept them ashore once the forces got off the beach. All are well illustrated, and in many cases, French reenactors pose in the uniforms representing the forces described in that particular chapter.

Among some of the items covered are the development of beach assault jackets, which were to be used by the first waves for carrying all of the extra items needed. This was an "exempt" garment, not unlike a fishing vest seen today, which was locally manufactured in the UK for the US Army. Fourteen thousand of these vests were procured, mostly for the 1st, 4th, and 29th Infantry Division regimental assault teams which hit Omaha and Utah beaches. While little has ever been said about them, the author shows via detailed photographic evidence that it was a necessity and very much in demand for the first few weeks of the invasion, as well as just the initial assault.

The book also covers how the fleet was set up for the actual assault, with specific boats, teams, and task forces with very specific tasks in mind when they came ashore. While many historians and buffs are familiar with the Ranger operations at Pointe du Hoc, this book provides detailed information on specific operations and teams, as well as composition, of how other obstacles were to be cleared and tanks and other support equipment landed to provide immediate support. While a number of books have concentrated on failures at the beach, this book provides quite a bit of photographic evidence that shows more successes than failures.

The book also covers the actions of units like the 70th, 741st and 743rd Tank Battalions. Of the three, the 741st took many losses in its Duplex Drive Sherman tanks due to a failure by a naval officer to abide by his instructions, and two overeager tank company commanders tried to show what the DD Shermans

could do by actually trying to swim the tanks — with an average of 8 inches of freeboard — through the surf. (It is noted two of the tanks were later found nine miles off the coast, indicating that they were launched way too soon.) Thirty-two were lost, which caused a great deal of trouble; however, where calmer heads prevailed, as with the 743rd, most of the tanks were beached and able to get into action fairly quickly and much more effectively.

Overall, the reference which this volume represents is a boon to modelers as well, as many vehicles which are not normally covered, such as the M29 Weasel, are shown in action and also placed in perspective of what they accomplished on D-Day.

However, as an import, this book may be hard to locate. Nevertheless, it's worth the effort.

STEPHEN "COOKIE" SEWELL
CW2 (Ret.)

EXIT ROMMEL: The Tunisian Campaign, 1942-1943 by Bruce Allen Watson, Praeger Publishers, Westport, Conn., 1999, 227 pp., \$39.95.

Watson attacks the Desert Fox in a way few authors have the audacity to do. He presents Rommel only in strategic defeat, thus giving a negative assessment of Field Marshal Erwin Rommel and the Afrika Korps. He analyzes the North African campaigns from the Second Battle of El Alamein across Libya to the Battle of Medenine in Tunisia. He reveals the weaknesses in the Axis command structure, defeats the myths of superior German weapons, and exposes the personality conflicts amongst Axis officers that led to the eventual destruction of the Afrika Korps. Lastly, the author discusses the combat leadership of Rommel with an appreciation for the many variables imposed by external influences.

In his analysis, Watson provides key insights to the Battle of Kasserine Pass, among others. He illustrates the collective bravery of Allied soldiers, and attacks the American leaders who caused terrible tactical errors. However, he makes rash judgments on tactics without strong doctrinal basis. He fails to present the doctrine of either army, and then make a case for better methods to fight the battle. He also confuses terms, causing superficial lessons to be learned from the battle. More detailed illustrations with computer-enhanced graphics could have provided a clearer picture on the development of each battle in his book, helping the reader gain an appreciation for the terrain, presenting options for modern maneuver tactics, and assisting the reader in retaining lessons for the future. Additionally, the author could have used an annex in the back of the book for organizational charts, and provided a better comparison of weapon systems to reinforce his points.

Despite some shortcomings, Watson's book is a great addition to the study of the North African campaigns of World War II. His candid assessments and detailed discussions of the

battles inspire both tactical and operational professional development and an examination of the qualities that make great leaders. I recommend this book to students of the Desert Fox and the North African campaign.

CHAD A. RUPE
CPT, Armor
Fort Knox, Ky.

Proud Legions: A Novel of America's Next War by John Antal, Presidio Press, Novato, Calif., 1999. 356 pp., \$24.95, ISBN: 0-89141-667-6.

Every soldier has had the thought of writing a Harold Coyle-type book with his unit as the focus. That seems to be the basis of this work. The author, the former battalion commander of the 2d Battalion, 72d Armor (2-72 AR), has placed his old unit at the center of his work. To quote Admiral Nelson, "A willing enemy and sea room" is the basic theme here. It takes place in Korea in the near future. The 2d Infantry Division has been equipped with all of the latest equipment, including the real stars of the story, which are M1A2 tanks.

The Korea of this story is basically the Korea of today. The North is poor, impoverished, starving, hostile, and militaristic. The South is economically troubled, corrupt, and unwilling

to believe in the chance of war. Through a very contrived set of circumstances, the North Koreans conduct a surprise attack on the South. With lots of purchased help and a convenient typhoon, they proceed to not only obtain great surprise but eliminate each one of the United States' technical superiorities except one; the M1A2s and the men who crew them from 2-72d AR.

The battalion finds itself perfectly placed to blunt the main attack of the North Korean forces. This being a story about tankers by a tanker, the other services barely make an appearance, and even other branches have only minor supporting roles. The situation is a battalion commander's dream. Not only is there a beautiful woman to protect, but best of all, there is no interference from brigade!

Antal covers both sides of the conflict, the perspectives ranging from individual soldiers to generals. His characterizations of the fog of war and the thought processes of the U.S. and Korean troops are some of the best parts of the book. On the other hand, his book was written for the general population, thus the early conversations of the American characters seem to be stilted and unbelievable. These conversations are intended to introduce the equipment and setting to the reader. By the end of the book he is in full bloom, with acronyms flying as fast as 120mm sabots.

I wish the author had included more of the planning processes in his descriptions. The few poorly detailed maps show where a unit fought, but none of the reasoning for why the commander chose this ground. Likewise, he barely touches on the role and the positioning of the scouts. I would have liked the author to have gone into greater detail about the more technical aspects of battle, such as the effects of different types of ammunition. While defending the area around a range complex, the battalion S3 mentions that there is plenty of training ammo at the range if it is needed, and also that there are two STAFF rounds (a special fire-and-forget tank round recently in development. -Ed.) per tank. Throughout the rest of the book I kept wondering, did the situation become so desperate that they had to use the training ammo? Did it work? Also, what were the effects of the STAFF rounds?

Proud Legions is a book that should be read for entertainment. It's fast-paced and exciting, even if the end is never really in doubt. Tankers can give it to their friends and family and use it to explain that "this is what I do for a living." It is not a work that will be used for a serious discussion of tactics, techniques and procedures. Antal has shown that he can clearly describe a tank battalion/task force in an entertaining manner.

DEREK C. SCHNEIDER
CPT, Armor

VIDEOS

America's First Battle Tank, Video in NTSC format from Hayes Otoupalik, Box 8423, Missoula, MT 59807 (phone 406-549-4817). Price \$19.95 plus \$5.00 postage, Visa/MC accepted.

No, not coverage of Shermans or Pattons, but a far older machine. When the U.S. entered the First World War in 1917 they had no tanks, so turned to Britain and France for first vehicles, then ideas and designs. The first U.S. armored units fought in British heavy tanks and the French light tank, the FT17. In due course, American industry began to build tanks, with their own version of the FT17 entering production and service under the designation M1917 Six-Ton Special Tractor. This is the vehicle covered in this video. One has been restored to original, running condition, and we are treated to a guided tour from driver's compartment to its trench-crossing 'tail', while our attention is drawn to the tank's many interesting and unusual features. Any one familiar with modern AFVs, and even those used to the armor of the '40s and '50s will be amazed by the apparent lack of refinement. This vehicle, in its original French form especially, was responsible for introducing many nations to tank ownership, use, and even manufacture, back in that simpler era.

After a run-down of the vehicle, we accompany the crew and a squad of suitably dressed and armed 'Doughboys' in an attack

on a German trench and pillbox, where the tank's 37mm gun is shown in action. Viewed from inside and outside, we see some of the advantages of the use of armor, and a few of its drawbacks. To end the story, we see two answers to the tank, in the form of an un-restored M1917 shattered by an encounter with a field gun, and the then new and fearsome (to both tank and rifleman!) 13mm Mauser T-Gewehr, fired against a steel plate. (The Mauser was essentially a scaled-up bolt action rifle.)

The re-enactors featured in this presentation use either replica or original equipment, from uniforms to the tank itself, including the German Spandau and Doughboys' Lewis and Browning Automatic Rifle. They have been considerate enough to allow us to see the effort they have gone to in order to amass and restore all these items, and this hour-long presentation is a unique chance to see it all in use and almost in action. While original film of the tank in action at the time exists, the coverage here gives a clear impression of what using these tanks in the Meuse-Argonne would have been like, and should interest later generations of tank crews for serious study or pure entertainment.

Panzers - Marsch and Die Artillerie, VHS videos codes CHR034 and CHR035 from Chronos. Both approx 60 minutes long. Available through Chronos UK, Stu-

dio J401, Tower Bridge Complex, 100 Clements Road, London, SE16 4DG, England, email chronos@callnetuk.com. UK VHS format, price £14.95 each plus postage as appropriate. American NTSC format should be available from Squadron Mail Order, 1115 Crowley Drive, Carrollton, Texas 75011-5010 (phone 972-242-8663, fax 972-242-3775, email mailorder@squadron.com) at \$29.98 plus postage (\$4.75).

These tapes are produced in the same format as the "Die Deutschen Panzer" series using wartime German footage with English voice-overs. "Panzers - Marsch!" is in a different format to the series, and uses two sources of material. The first is newsreel film with sections showing tanks in action during Operation Zitadelle and the withdrawal to the Dniepr. This includes early Tigers and the voice-over contains a contemporary war correspondent's account of them in action. Various other German vehicles appear, as well as Russian AFVs in various stages of destruction. Additional short sequences show what is claimed as the only known film of Pz IV/70(V) and late Brummbär, and film from the Battle of the Bulge which has appeared as stills in several publications. The main part of the tape is two training films which allow insights not only into vehicles but the German Army's tactics as well. One concentrated on early Panthers,

showing how to attack a Russian defended position and counter the methods the Red Army used against attacking tanks. This, of course, shows these tactics as well. The "Russians" are clothed and equipped realistically but their actions owe more to method acting than battle tactics. That apart, the film demonstrates changing damaged vision blocks under fire alongside the use of grenades, machine guns, and fire extinguishers and the method of collapsing trenches where tank hunter teams would lie hidden to attack the tanks from behind.

The second film shows Panzergrenadiers planning and executing a counterattack against the Russians. Several SdKfz 251 supported by Jagdpanzer IV and SdKfz 251/16 Flammpanzerwagen show the approved textbook methods. The film also shows methods of concealing vehicles and scouting and marking routes. The planning and orders lead to the group attacking, with the halftracks taking the troops forward to leap

from their vehicles to engage in hand-to-hand combat, supported by their own weapons and the tank destroyers. Now cut off, the Russians are mopped up using the flamethrowers and the lessons are summarized using an animated map.

"Die Artillerie" shows the whole range of artillery used by German ground troops during WWII. It concentrates on towed weapons — self-propelled ones have already been covered — with film from all theaters of war. Background details tell how the rearmament was planned within the restrictions of the Versailles Treaty, then each type is shown in detail. These range from infantry guns like the 75mm IG18 with its odd breech system and the larger 150mm model, to the standard 105mm and heavier field guns, on up to larger calibers, and finally to the railroad guns, such as the K5E. Sequences also include guns on the Atlantic Wall using film original German audiences were told showed the Allied landings being repulsed.

The section on antitank guns includes the whole range, 37mm, 50mm, and 75mm, as well as anti-aircraft guns with 20mm single and quad and the larger 37mm series in the hands of Luftwaffe field units in use against aircraft and ground targets. There is a lot of footage of the well-known "88" in all its roles, from pure anti-aircraft gun used against Allied bombers and its anti-tank as well as a general support roles on all fronts. This includes a rare view on the 41/43 type.

Almost all the film is black and white, but it does have some color footage which shows light flak guns and 88s in action and one sequence where a horse-drawn Pak 40 is brought into action in grand style. Both tapes contain much interesting film with informative captions. Seen as research material for models in its own right, they make good companions to the original series.

PETER BROWN
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SOFTWARE

West Front and West Front: Battle Pack I by Talonsoft, \$49.95 and \$19.95 from Talonsoft website or local software retailer.

Requires Windows 95/98, Pentium 133 or higher, 4x CD-ROM, 32 MB RAM minimum, Microsoft compatible mouse, 16-bit high color SVGA graphics and any Windows compatible sound card.

Reviewed on IBM PC 133 Pentium with Windows 98 and 56 MB RAM.

Talonsoft has released the second game in its World War II series of tactical games. *West Front and West Front: Battle Pack I* simulate World War II tactical combat from platoon-through brigade-level operations. The game and the module have scenarios from the Operation Torch landings to the end of the war in Europe along the Elbe River. The battle pack comes separate from the game. It adds 50 scenarios, additional linked campaign scenarios, and additional equipment.

The game presents the player with scenarios, both single, multiple player, modem, and linked scenarios, and campaigns. Each scenario comes with a background description, difficulty rating, recommended number of players, and recommendation for type of play. Along with these detailed descriptions, the game has a lengthy rulebook. The rulebook is organized into sections that explain each function a player may perform during each game turn. In these sections, there is an example with an illustration of that function. Each nation also has an equipment listing with photographs of various pieces of equipment and their different game ratings. The best feature of the rulebook is the in-depth tutorial and background information about the principles of war and how they apply to the game.

A game turn follows a simple pattern. The player is notified of any reinforcements. He then points and clicks units to move or fire. Artillery and air strikes are separate pull down menus or toggle keys. The game has numerous toggle keys in toolbars that allow a player to customize everything from the map layout to unit information. There are two primary windows that allow players to see an individual section of the map and the entire map. Objectives are terrain features, such as villages, hills or road intersections.

The game actually portrays over 25 different terrain types, ranging from beach to *bocage* to large urban areas. The game also takes into account battlefield effects such as burning vehicles and weather. Movement is based on unit type, plus the effects of terrain entered. Units move individually or in groups. Fire combat is based on observation, weapon type and range, and target type. The game is aesthetically pleasing with battlefield sights and sounds.

The game's primary strengths stem from the well-designed rulebook, ease of play format, and overall appearance. The tutorial allows players to immediately install the game and play within minutes. It covers all of the game situations a player may face. It has integrated amphibious assaults, paratroop and glider operations, along with all aspects of movement and fire functions. The Windows-based game system allows players to learn the game format itself quickly. It also allows players to customize game features, even during play. Finally, the graphics and sound effects just make an enjoyable gaming experience.

On the negative side, I have found the command and control rules hard to understand. The supply rules are also a problem based on that feature. Battalion and higher

headquarters are represented in the game with leaders and command and control vehicles. These units have either visual or radio contact with subordinate units or higher headquarters. The rules do not cover how units maintain command and control by defining the radius or span of command. The game automatically calculates command and control and notifies the player when units are not in command and control. So, a player can move units out of higher headquarters' command radius and not know how to move units back into that radius. If a unit is out of command radius, it can run low on ammo as well. Again, this creates a dilemma for the player without a solution. Some of the larger scenarios can also take a lot of time to complete. This time results from more than one unit in an area operating at the same time. Players can have large numbers of individual or grouped units to move, and all functions pertaining to movement and fire are regulated by hexes. Watching a unit move hex by hex actually takes time during each turn as well, so individual turns can take up to a half hour in larger scenarios to complete.

This game does an excellent job in providing the user with a well researched, detailed simulation of tactical operations on the West Front in World War II. The order of battle, equipment listing, and scenarios or campaigns allows a player to fight most actions using many different nationalities. Despite the command and control rules, I recommend Talonsoft's *West Front and West Front Battle Pack I* as a game to enjoy again and again. The graphics and sound effects, along with the above-mentioned features, make this a great way to spend an evening alone or linked with friends.

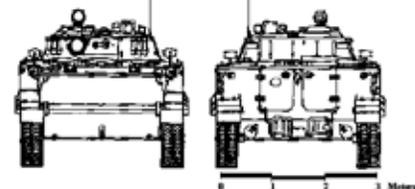
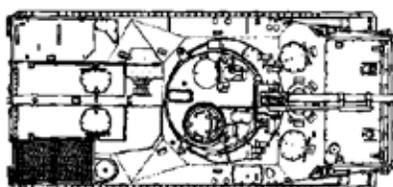
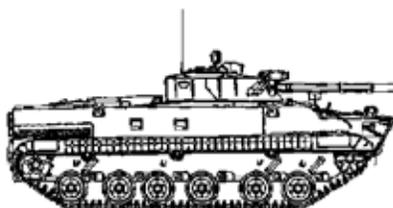
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Ft. Knox, Ky.



BMP-3



Russian Infantry Combat Vehicle



Characteristics

Crew Size	3+7 infantrymen	Max Road Speed	70km/h
Combat Weight	18,700kg	Max Speed Afloat	10km/h
Height (overall)	2.65m	Armament (main gun)	100mm
Length (hull)	6.715m	Armament (coaxial)	30mm
Length (overall)	7.14m	Armament (coaxial)	7.62mm
Width (overall)	3.23m	Armament (bow) x2	7.62mm
Max Road Range	600km	Armament (ATGM)	AT-10

Using countries: Azerbaijan, Cyprus, Kuwait, Russia, South Korea, Ukraine, UAE (Abu Dhabi)

Major Variants



- BMP-3 Reconnaissance Vehicle
- BMP-3 Recovery Vehicle
- BMP-3 with Wildcat Turret
- BMP-3 with Mistral SAM
- 2S31 120mm SP gun/howitzer
- Kornet-E antitank system
- Khryzantema antitank system



Poster produced by Threat Branch, USAARMC, Fort Knox, Kentucky 40121

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