



ARMOR

March-May 2010

*Mounted Warriors:
Honoring the Legacy,
Spearheading the Future*

ARMOR

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LETTERS

Future Full-Spectrum Operations Requires a Robust Armor and Cavalry Capability

Dear *ARMOR*,

Major Aaron Lilley's article, "Dismantling the Armor Force?" in the November-December 2009 edition of *ARMOR*, is timely and relevant to the current debate over the Army's future force structure. However, Major Lilley's argument is based on a false calculation of the Army Force Generation (ARFORGEN) timeline. He states that ARFORGEN is a 4-year cycle with 3 years of dwell time for every 1 year of deployment, instead of a 2-to-1 cycle. Otherwise, I would say he makes a very good argument for retaining armor and cavalry capabilities in the force.

Analyzing his argument using a 3-year cycle, I would recommend 18 infantry brigade combat teams (IBCTs), 9 Stryker brigade combat teams (SBCTs), 15 heavy brigade combat teams (HBCTs), and 3 armored cavalry regiments (ACRs) as an ideal force structure for our future full-spectrum capable active force. This would allow the active Army to constantly have 6 IBCTs, 3 SBCTs, 5 HBCTs, and 1 ACR in the available force pool at any given time. The need for light and medium forces for low-intensity/stability operations is not going away and heavy forces will continue with these missions as well. However, we will still have a requirement to prepare for high-intensity/major combat operations (MCO) for the foreseeable future, which requires a robust armor and cavalry capability. A corps deployed to conduct MCO will need its own intelligence, surveillance, and reconnaissance (ISR) and security capability, which the ACR is ideally suited to provide. The ACR is also very effective in stability operations in border security and counterinsurgency roles.

I further agree with Major Lilley's proposal to maximize the capabilities of the armored reconnaissance squadron (ARS) in the HBCTs by adding a tank company to the squadron and two tank platoons to each cavalry troop. This enhanced capability would allow the ARS to conduct guard missions for the HBCT, as well as provide a third robust maneuver option for the HBCT.

As the Army refocuses its force structure to a balanced full-spectrum force that meets the combatant commander's needs, we must not neglect the heavy armor and cavalry forces required for major combat operations.

ROBBIN HAFEN
Major, U.S. Army

As the World Turns

Dear *ARMOR*,

It was a historical event when, in the middle of the last century, the powers to be decided that the U.S. Army cavalry branch should "marry" the U.S. Army armored force that had been so successful in Europe during World War II. The "happy couple" would become the "armor branch" with a new insignia depicting cross sabers with the front view of an M26 tank. The immediate problem was that the armored recon/armored cavalry regiment types did not

want to give up their plain crossed sabers — and they did not.

The World War I tankers wore the Mark IV tanks (Pickle) insignia and they did not want to give that up, but they did. During the 1950s in 7th Army Europe, General Bruce C. Clarke decreed that the new brass would be worn by military occupational specialties (MOS) 1203 and 1204, alike, and these soldiers would wear issue field jackets. Tanker jackets and tanker boots were prohibited — an order that was not well thought out. When the general was out of sight, cavalry squadrons and regiment troopers wore their crossed sabers and the tankers wore their tanker jackets and boots. This was especially true in the 8th Army in Korea. By the time General Clarke left Germany, the 7th Army regulation on brass, tankers jackets, and boots could not be, and was not, enforced. Later during Vietnam, the ground and air cavalry put the crossed sabers on everything. The air cavalry loved to dress up with spurs and black Stetsons. But what was about to happen with this great "Army of transformation?" Were the infantry lords of war, who never recovered from the central campaigns in Western Europe where the infantry had to take a back seat to an armored force, rising? It really started with the breakout at St. Lo in France during 1944. The Army papers *Yank and Stars and Stripes* printed boldly "Armor Forces breakout at St. Lo and head for the heart of Germany." My father's combat command (CCB, 3d Armored) advanced more than 100 kilometers in one day, leaving pockets of the enemy for the infantry to mop up. The order of the day was "roll on armor."

The historians tell us the war in Europe was cut short as a result of aggressive armor operations. In Korea, tank units and armored cavalry were restricted by the terrain. The tanks did a lot of bunker busting and often the infantry had to protect itself from returned enemy 120mm mortar fire.

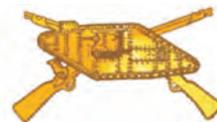
In Vietnam, ground operations for armor units were difficult, but armored and air cavalry fires were devastating to the enemy. U.S. infantry was still operating with 1/25,000 maps and still could not understand what a "mission type" order was.

I like the new Stryker and today's mobile-minded infantry officers and NCOs. For armor types, there probably will not be too many battles that require the Abrams tank and Bradley fighting vehicle to be employed in great mass formations. The Vets of Desert Storm and Iraqi Freedom may someday tell their grandchildren that they fought in the last tank versus tank battles. It was the perfect sand box exercise of the employment of armored forces.

I cannot remember when it was first proposed that the armor and infantry schools be collocated. A study was conducted in the 1970s, which included a place called "Camp Irwin, California." An old armored soldier told us years ago that the infantry warlords would coach armor into its den someday. He told us to beware of "infantrymen who wear yellow lipstick," because if armor marries up with the infantry branch, armor will be history in less than 10 years. I suppose it is time to accept multitalent-

ed warriors and their various new weapons systems. It is ironic that wheeled armored combat vehicles have finally been accepted in the U. S. Army's inventory; they were unacceptable for so long.

It was a "religious thing" I think. Other major armies in the world have had armored combat vehicles for decades. The Europeans mounted 105mm guns on a wheeled armored vehicle years before the first M1s were issued to our troops. We must recall that the great steeds gave way to the armored cars, then the light tanks, then the medium tanks to main battle tanks, and then on to the "super tanks." The Gulf War was one of the first conflicts that we entered where we out-gunned the other side. When the infantry and armor branch evolve into a mounted combat branch it might be appropriate to consider the old 1920 insignia (see below):



One thing's for sure. You can bet your boots that the recon types on land and in the air or space will wear the crossed sabers, even if they have to tattoo them on their butts.

BURTON S. BOUDINOT
LTC, U.S. Army, Retired
31st Editor in Chief, *ARMOR*

Design for Operational and Tactical Leaders? I'm Lost!

Dear *ARMOR*,

After twice struggling through the article, "Design for Operational and Tactical Leaders" by Lieutenant Colonel (Retired) Thomas Clark, Ph.D., in the January-February 2010 edition of *ARMOR*, I am lost.

I write this so that others will know that they are not alone; this article borders on incomprehensible. For example, "The aim of the describe component of design is to combine the environmental frame (understand) with the problem frame (visualize) into expressions that drive staff planning and shape expectations for external audiences (see Figure 3)." Huh?

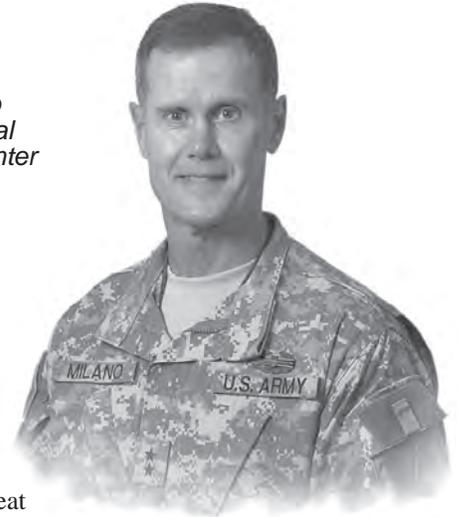
Perhaps the point of the article is that before pushing their staffs into the formal decisionmaking process, commanders have a duty to first look at the "big picture" (however defined) and provide guidance. I'll go along with that. I have personally observed many instances of commanders who provided little or no guidance other than to demand three courses of action and then maligned the staff over all of them.

Perhaps there is some coherent checklist, outline, or sequence in the new U.S. Army Manual 5-0, *The Operations Process*, which describes and maybe formalizes this process under the term "design." That might prove useful. Perhaps, however, the responsibility for clarity and comprehension is with the author.

CHESTER A. KOJRO
LTC, U.S. Army, Retired

COMMANDER'S HATCH

MG James M. Milano
Commanding General
U.S. Army Armor Center



Moving to the Objective

Team, we have crossed the line of departure and are closing in on two critical events for Fort Knox — standing down the Armor Center and moving the Armor School to join the Maneuver Center of Excellence at Fort Benning, Georgia. I'd like to take a quick look at the past few years, which have made the Armor force ready and resilient, guiding it through a period of dynamic transformation and making it stronger than ever.

We have weathered many storms over the past few years; however, our ability to continue to train and produce the finest soldiers and leaders in the world remains solid. The U.S. Army is currently engaged in two simultaneous major conflicts and numerous smaller engagements across the globe; it is dealing with natural disasters, internal changes such as modularity, and large-scale reorganization brought on by base realignment and closures. We are clearly comfortable with fluid situations, ambiguity, and changes that are rapidly occurring and continually increasing.

Not to sound partial, but one of the primary influences that has helped our Army grow and learn to thrive in this environment is the Cavalry mindset that filters through the force. The Cavalryman has always had the ability to take just his commander's intent, move into unknown situations, and develop the situation ... and when the opportunity arises, the audacity to act on it. Today's operating environment is exactly where you would expect a Cavalry Trooper to be at the forefront. We operate in increasingly larger areas, among the populace and enemy alike, and frequently our ingenuity and attitude are our most important combat multipliers. This type of thinking is exactly what we need today; however, its value will steadily increase as we spearhead the future.

As part of this era of transformation, it is my great honor to host the final Armor Warfighting Conference at Fort Knox. We have a long and rich history in the branch and many of our historic moments and future concepts were created during these conferences.

In May 1946, the first Armor Conference gathered military leaders with armor expertise at Fort Knox to discuss the issues and future of Armor, which included organization (armored division), equipment (tank design), and future developments (tanks

and protective tank clothing). Armor played a pivotal role in World War II, and after the defeat of the Axis Powers, Army

leaders were considering the future of tanks in the Army. Many subjects, such as the need for an armor branch, the necessity of cavalry groups, the ratio of infantry battalions to armored battalions in an armored division, if cavalry mechanized reconnaissance squadrons were to be considered armored or cavalry, and the details of muzzle velocity and tank cannon size, were the critical topics of the conference. However, most of the questions arising from the 1946 conference discussions were left unanswered until 1950, when the Armor branch was established. Ironically,

the branch finds itself at a similar junction today; the long war, base realignments and closures, establishment of the Maneuver Center of Excellence, and future combat developments are converging and will redefine Cavalry and Armor's role in the U.S. Army.



The Armor Warfighting Conference has grown to host more than 60 vendors and 30 combat vehicles from our industry partners. Guest speakers and panels, comprised of senior military leaders and professional subject-matter experts, will present briefings and lead professional discussions. These events will focus on showcasing and discussing advancements in

military technology, tactics, equipment, and the future of the Armor force. Discussions will focus on strategies for training full-spectrum operations, lessons learned from operations in Iraq, trends from training centers, updates on leader development and training, and many more. We will also have the opportunity to hear from senior leaders, such as the Vice Chief of Staff of the Army; the commanding general, TRADOC; the commanding general, FORSCOM; and the Special Assistant to the Chief of Staff for Army Enterprise.

As I said up front, we are moving out to the objective and this Armor Warfighting Conference is a time for looking back on our history, but more importantly, looking forward with eager anticipation to the future!

Treat 'Em Rough!

CSM John Wayne Troxell
Command Sergeant Major
U.S. Army Armor Center



The Times, They are a Changin'

Greetings to all from the Armor Center and Fort Knox! When Bob Dylan released his album "The Times, They are a Changin'" in 1964, he did so, in his words, "as a deliberate attempt to create an anthem of change for the moment." Although, its been more than 46 years since the album's release, this phrase remains ageless and is extremely applicable here at Fort Knox. The Base Realignment and Closure (BRAC) is upon us and we have begun the process of relocating the Armor School to Fort Benning, Georgia, as well as welcomed new organizations, such as the Accessions Command, Cadet Command, and Human Resources Command, to Fort Knox as it transitions from the U.S. Army Armor Center to the Human Resource Center of Excellence.

Although we are in the midst of transitioning, the 2010 Armor Warfighting Conference will be held at Fort Knox from 17-20 May 2010! This is a very exciting time in the history of the armor branch, so we decided on "Mounted Warriors: Honoring the Legacy, Spearheading the Future" as this year's conference theme. We have invited an impressive number of great keynote speakers and visitors for this event, which will certainly produce a wealth of information on the many subjects facing the future of the armor branch.

The Armor Warfighting Conference agenda is filled with notable events, such as the Command Sergeants Major breakout session on 18 May, which consists of updates from Iraq/Afghanistan, as well as updates on the Pacific theater by the U.S. Army Pacific Command Sergeant Major; an update from the Joint Improvised Explosive Device Defeat Organization Command Sergeant Major on the latest tools of the enemy; and a combat training center panel, consisting of the Command Sergeants Major of the Joint Readiness Training Center, the National Training Center, and Joint Multinational Readiness Cen-

ter. These Command Sergeants Major will provide lessons learned and trends from rotating units, as well as a much-needed brief on each unit's capabilities as we focus on full-spectrum operations for the future. Also scheduled is a thorough brief on the BRAC developments and preparations of the Armor School. We have also planned a tour of the new Human Resource Command of Excellence complex at Fort Knox. Our branch leaders must understand the critical need to take back invaluable information from the conference to their soldiers. We all deal with competing priorities; however, this year's Armor Warfighting Conference provides our leaders the priceless opportunity to help direct the future direction of the armor and cavalry force.

We certainly do have a lot to look forward to in May. One of the highlights, definitely from the soldier standpoint, is the Armor Warfighting Conference Mod-

ern Army Combatives Program Tournament from 18-20 May, which promises to be an action-packed event! When you have a break between briefings, come by Natcher Gym and support true warriors battling it out.

For more information on the conference, please visit the website at www.knox.army.mil/armorconf/. Major General Milano and I hope you all will be able to join us for this great event in celebrating the lineage and history of our mounted force! This is a great event for not only armor and cavalry soldiers and leaders, but for leaders and soldiers from all branches. Thank you for all you do!

Forge the Thunderbolt!



"One of the highlights, definitely from the soldier standpoint, is the Armor Warfighting Conference Modern Army Combatives Program Tournament from 18-20 May, which promises to be an action-packed event!"



The Horse Cavalry Heritage

by Dr. Robert C. Cameron

In the colonial era, America's mounted force consisted of militia mounted on horses to cope with Indian raids or serve with the British in their conflicts with the French in North America. In this early period, the heavily wooded terrain of the continent and a small population restricted the size of cavalry units and the extent of their operations. During the Revolutionary War, a need emerged for permanent cavalry units to support the Continental Army. On 12 December 1776, the Continental Congress authorized the creation of the 1st Regiment of Light Dragoons and authorization for an additional three regiments soon followed. Basic issue to each trooper included a coat, cap, leather breeches, and a pair of boots and spurs. Weapons consisted of a saber and flintlock pistol that each man provided for himself, while officers were further expected to supply their own mounts.

These dragoons units faced continuous problems in recruiting, finding suitable mounts, and securing supplies. Dragoons were intended to fight mounted or on foot, but their lack of a long-range firearm made them exceptionally vulnerable when dismounted.

These problems led to reorganizing the dragoons into legions, consisting of mounted dragoons and dismounted light infantry. Born of necessity, legions provided a more versatile battlefield force; they performed raiding, reconnaissance, screening, and foraging operations. Mounted militia units supported these ac-

tivities through continuous attacks on British supplies and outposts. In January 1781, dragoons played a central role in the destruction of British forces at the battle of Cowpens. This battle symbolized the growing effectiveness and potential value of a mounted force.

After the Revolutionary War, the dragoons disbanded. For the next 50 years, mounted units were created only temporarily to cope with specific threats. Efforts to minimize military expenses and avoid unpopular taxation often left the fledgling U.S. Army with no cavalry during this period. Instead, volunteer mounted infantry operated on the frontier, although the War of 1812 witnessed the creation of a small cavalry force.

By the 1830s, continued expansion beyond the Mississippi River brought the United States into direct contact with the Plains Indian nations. Unlike the sedentary Indians encountered east of the river, the nomadic Plains Indians relied on the horse for mobility. To secure this ever-expanding frontier, the Army initially possessed few posts with only small garrisons of foot-mobile infantry and artillery. Therefore, in 1833, the Army organized the 1st Regiment of Dragoons. This unit's speed, mobility, and ability to fight mounted or dismounted made it ideal for frontier operations. However, the absence of cavalry doctrine forced the regiment to develop and train its own tactics. Expansion of the Army's mounted force soon followed, but corresponding doc-

"By the 1830s, continued expansion beyond the Mississippi River brought the United States into direct contact with the Plains Indian nations. Unlike the sedentary Indians encountered east of the river, the nomadic Plains Indians relied on the horse for mobility. To secure this ever-expanding frontier, the Army initially possessed few posts with only small garrisons of foot-mobile infantry and artillery."

trinal and organizational developments reflected confusion regarding the role and purpose of cavalry. During the 1846-1848 Mexican War, mounted forces were broken into small detachments to perform reconnaissance, pursuit, and administrative roles. They performed well against the Mexican army and earned a reputation for dash and vigor. Their activities attracted the attention of General Winfield Scott. In response to the Regiment of Mounted Riflemen's successful storming of Chapultepec, he proclaimed "Brave Rifles! Veterans! You have been baptized in fire and blood and have come out steel." This unit later became the 3d Cavalry Regiment.

The war experience did not resolve the uncertainty over the function and composition of mounted units. In 1855, the Army added the 1st and 2d Cavalry Regiments to its mounted force, which now included an array of mounted riflemen, dragoons, and cavalry. Uniform doctrine and organization did not exist. Similarly, weapons varied among unit types. The new cavalry regiments, in particular, carried a variety of experimental muzzle- and breech-loading firearms.

Nevertheless, the continuing westward expansion of the United States provided ample opportunities for the employment of mounted troops of all types. Scattered across the western plains, small detachments of dragoons, cavalymen, or riflemen escorted wagon trains, surveyed new territories, and served as a buffer between the Indian nations and the growing numbers of settlers. In the 1850s, two regiments also participated in the Army's unsuccessful effort to end violence in Kansas, which occurred when the issue of slavery split the state's population into two armed camps.

The start of the Civil War in 1861 broke the integrity of the cavalry regiments. Many soldiers left their units to join the Confederate Army. Initially, Union cavalry accompanied infantry divisions, operating in small numbers to provide details and escorts. Such dispersal nullified combat potential. Confederate cavalry, however, was organized in large formations and assigned at the corps and army level, performing a variety of operations loosely categorized into raiding, reconnaissance, screening, pursuit, and delay. In addition, Confederate cavalry also fought on the principal battlefields alongside infantry and artillery. Their larger size, versatility of mission, and aggressive, energetic leadership made Confederate cavalry far more effective than its Union counterpart in the first years of the war, despite nonstandard equipment that included an array of sabers, carbines, pistols, and shotguns. In 1862, for example, J.E.B. Stuart led a cavalry force behind and around the Union lines, losing one man while gaining useful information for the subsequent Seven Days Battles and taking 165 prisoners. Following the Battle of Shiloh, Confederate cavalry under the separate commands of Nathan Bedford Forrest and John Hunt Morgan helped stop a Union advance on Chattanooga by continuously attacking the Union supply line and conducting sweeping raids through Kentucky. These actions also set the stage for the Confederate invasion of that state and the subsequent Battle of Perryville. Similar cavalry raids against Union supply lines also temporarily halted Union operations against Vicksburg.

Union cavalry noticeably improved in 1863, when cavalry units were removed from infantry formations and grouped into divi-



sions under a separate command. The creation of the Cavalry Bureau provided a central organization responsible for organizing and equipping cavalry units. These changes permitted Union cavalry to conduct raids on its own, symbolized by the Grierson Raid in which 1,000 troopers rode 600 miles through Confederate-held territory in Tennessee and Mississippi. In 1864, Major General Philip H. Sheridan became the principal influence on Union cavalry. He emphasized the creation of cavalry corps and independent operations. The larger organization possessed a formidable mix of firepower and mobility, enhanced further with the introduction of the Spencer Repeater, a seven-shot, breech-loading weapon. Sheridan himself demonstrated the power of the larger cavalry organization by leading a raid on Richmond. In support of army operations, however, larger cavalry formations proved capable of independent action that could decisively influence the outcome of a battle. Following the battle of Five Forks in April 1865, it was Sheridan's Cavalry Corps that blocked the Confederate Army's retreat, captured its supply trains, and encouraged General Robert E. Lee's surrender at Appomattox Courthouse.

The Civil War firmly established the basic cavalry missions of reconnaissance, security, economy of force, exploitation, pursuit, delay, and raid. The war also demonstrated the supremacy of firepower over the mounted charge. Cavalry units tended to use their horses for transport and fight dismounted, conducting mounted assaults only against surprised or broken forces. These same principles found widespread employment in the decades following



"In the colonial era, America's mounted force consisted of militia mounted on horses to cope with Indian raids or serve with the British in their conflicts with the French in North America. In this early period, the heavily wooded terrain of the continent and a small population restricted the size of cavalry units and the extent of their operations."

the Civil War, especially during the numerous campaigns against Indian nations on the frontier.

The end of the Civil War resulted in a sharp decrease in the Army's size. Volunteers returned home at the same time the Army assumed responsibility for occupation of the ex-Confederate states and was called on to intervene in labor disputes. In the West, expansion and settlement continued, which in turn triggered Indian resistance. Cavalry regiments again became the preferred means of providing security and stability throughout the western territories. Their combination of mobility and firepower made them more effective in dealing with the elusive and nomadic Plains Indians. However, the small numbers of mounted troops available to control a land mass that stretched from the Canadian to the Mexican border and from the Mississippi River to California resulted in regiments operating from multiple posts in squadron- and troop-size increments.

Cavalry soldiers, sometimes supported by infantry, sought to prevent violence between settlers determined to develop the West and Indian nations equally determined to resist encroachment on their tribal lands. The Army became the principal tool for implementing the American government's reservation policy, which

relocated Indian nations to designated areas protected from settlement. However, the harsh conditions of these reservations frequently triggered Indian resistance or efforts to avoid resettlement. The Nez Perce Indians, for example, attempted to flee to Canada rather than accept life on a reservation.

Cavalry units proved the spearhead for eliminating Indian resistance and protecting settlements from Indian raids. Initially, they proved less than adequate. Cavalry columns remained tied to supply wagons, which sharply reduced their speed. Indian warriors exploited their superior mobility to fight on their own terms. They proved elusive and difficult to fix in place long enough for superior Army firepower to prevail. Consequently, cavalry organizations began to rely on Indian scouts to track and locate hostile forces. They also resorted to winter operations against Indian villages, which tended to remain in one location throughout the season. Unused to winter campaigning, many Indian nations surrendered after suffering devastating attacks by mounted forces in bitterly cold conditions.

In the Southwest, the Army faced a different Indian threat. There, warriors repeatedly left reservations to conduct raids before retreating to mountain hideouts. To apprehend these Indians, cav-



"Following the Battle of Shiloh, Confederate cavalry under the separate commands of Nathan Bedford Forrest and John Hunt Morgan helped stop a Union advance on Chattanooga by continuously attacking the Union supply line and conducting sweeping raids through Kentucky. These actions also set the stage for the Confederate invasion of that state and the subsequent Battle of Perryville."



"In 1916, the conflict spilled over the border when Pancho Villa, the leader of an anti-American faction, attacked Columbus, New Mexico. The United States responded by sending a 5,000-man column into northern Mexico after the raiders. The column included cavalry, trucks, and aircraft to support ground troops. This action became known as the 'Punitive Expedition.'"

ally units used scouts to track the raiders and apply pressure on them. Although contacts proved infrequent, the relentless pursuit tactics often forced the raiders to surrender, starve, or fight in unfavorable circumstances. In these campaigns, conducted under difficult conditions in an unforgiving climate, the 9th and 10th Cavalry Regiments played a prominent role. These regiments were composed of African-American soldiers and non-commissioned officers led by white officers. Their habit of wearing buffalo robes earned them the nickname "buffalo soldiers."

For many soldiers service on the frontier was characterized by long periods of boredom and inactivity punctuated by short bursts of intense action and combat. On campaign, complacency and overconfidence, however, proved almost as dangerous as the enemy. In 1876, the 7th Cavalry Regiment sought a rapid conclusion to operations against the Sioux and Cheyenne in Montana. Noted for its dash and aggressiveness, the regiment finally located its quarry and immediately prepared to attack. Without waiting for infantry or artillery support from supporting columns, and without effectively determining the strength of the opposition, the regiment attacked. It soon found itself fighting for survival against an unprecedented concentration of more than 2,000 warriors. The ensuing battle of Little Big Horn resulted in the destruction of more than half of the regiment, including its commander.

Despite this victory, the Indian nations could not stop the expansion of the United States. By the 1890s, the frontier had closed and the Indian wars had come to an end.

Cavalry units, however, continued to find employment as the nation began to transform into a global power. They fought in the Boxer Rebellion in China, the Spanish-American War, and the Filipino Insurrection. During these conflicts, mounted units faced the conventional forces of Spain, Filipino guerrillas, and the fanatical Boxer mobs intent on killing foreigners. However, cavalry units also provided humanitarian assistance to San Francisco in the wake of the great earthquake and fire of 1906, and they assumed occupational duties in Cuba.

These experiences shaped cavalry development, encouraging greater reliance on modern firepower, maneuver, and rapid mobility. The principal weapon became a .30-caliber, magazine-fed rifle that used smokeless powder. Drill and service regulations

underwent improvements and new organizations were tested. Machine gun platoons also joined cavalry regiments. Symbolic of the growing importance of cavalry to the Army, permanent mounted divisions and brigades were also established.

In 1910, border unrest resulted from the outbreak of civil war in Mexico. There, multiple factions vied for power and sought international support, including American aid. In 1916, the conflict spilled over the border when Pancho Villa, the leader of an anti-American faction, attacked Columbus, New Mexico. The United States responded by sending a 5,000-man column into northern Mexico after the raiders. The column included cavalry, trucks, and aircraft to support ground troops. This action became known as the "Punitive Expedition." After a pursuit over rugged terrain reminiscent of similar operations conducted during the Indian wars, the column successfully launched a surprise attack on Villa and his supporters.

The Punitive Expedition marked the last major action of American horse cavalry, which played only a minor role during World War I. However, the horse cavalry continued to modernize and experiment with new ideas and tactics. Cavalry leaders sought to retain the battlefield relevance of their branch amid an array of new technologies. In the 1920s and 1930s, horse cavalry units incorporated a growing pool of motor vehicles for reconnaissance and logistics purposes and increased the number of organic automatic weapons. The horse was retained because no vehicle could yet match its cross-country mobility. Cavalry doctrine stressed the importance of operating in small, dispersed groupings. Coordinating the actions of these groups posed a challenge that encouraged increased use of the radio. In response to the growing threat of armored vehicles, the horse cavalry developed antitank tactics based on firepower, depth, and mobility to channel and destroy enemy tanks. With the development of reliable armored fighting vehicles and the need for heavier weapons to defeat them, however, horse cavalry ceased to be a competitive force on the battlefield. World War II marked the final replacement of the horse with vehicles, and mechanized cavalry replaced the horse cavalry.



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The Development of American Armor 1917-1940

by Timothy K. Nenninger

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Walter Millis in his book, Arms and Men, declares, "The one great, determining factor which shaped the course of the Second World War was not, as is so often said and generally believed, independent air power. It was the mechanization of the ground battlefield with automotive transport, with the 'tactical' airplane and above all with the tank." Panzer divisions spearheaded the German attacks into Poland, France, and Russia. The Germans, Italians, and British employed tanks widely in the North African campaigns of 1940, 1941, and 1942. Armor played an important role in the Russian counteroffensive, which began after the German defeats at Stalingrad, Moscow, and Leningrad. And American armored divisions led the way to the Rhine and the Elbe following the Normandy landing. But American armor did not just emerge in 1944. The United States Army had been developing tanks and doctrine for mechanized warfare since World War I.

Throughout the period examined in this article, American armor developed in three interrelated areas: equipment, organization, and doctrine. Slow-moving tanks could not perform the mobile missions envisaged by the mechanized cavalry leaders in the late thirties. On the other hand, slow tanks were acceptable for supporting infantry assaults. Tanks organized into companies for supporting infantry battalions were not capable of accomplishing the same missions as a mechanized force composed of tanks and supported by other arms. Obviously then, armor doctrine depended on, and was a result of, the type of tanks available and the organization of the tank units. To determine how and why American armor developed in the manner it did, it is necessary to focus on each of three elements: equipment, organization, and doctrine.



Chapter I: The World War I Experience

When the United States entered World War I in April 1917, tanks had yet to prove their capabilities. Following the Battle of the Somme in 1916, the allies had employed tanks with disappointing results. Because of their poor performance, the American military mission in Paris declared tanks a failure. In view of this, the general organization project for the American Army in France ignored organizing a tank service. But on arriving in France in June 1917, General John J. Pershing detailed a number of committees to study the tactics and organization of the French and British armies.

Reporting to the infantry operations section of Colonel C.B. Baker's commission, Lieutenant Colonel Hugh A. Parker discussed the employment of large numbers of light and medium tanks in conjunction with tactical air power and motorized infantry. Unfortunately, World War I tanks proved incapable of fulfilling the mobile role envisaged by Parker.

Another board, appointed by Pershing, which considered the use of tanks, consisted of Colonel Fox Conner, Colonel Frank Parker, and Lieutenant Colonel Clarence C. Williams. The salient point of their report contrasted sharply with the military mission's report. It concluded, "The tank is considered a factor which is destined to become an important element in this war." This board considered the French Renault and the British Mark VI satisfactory models for use by American troops. Finally, they recommended the organization of a separate tank service under the command of a single chief who reported directly to General Pershing. During the war, American tank development generally followed their recommendations.

Despite these preliminary studies, much preparation remained before an American tank unit would enter combat. Procurement of tanks proved to be the most difficult task. Based on the early studies, and approved by Pershing on 23 September 1917, the project for the overseas tank corps outlined the organization of five heavy tank battalions of 375 British Mark VIs and twenty light tank battalions composed of 1,500 Renaults. As we shall see, this program proved too ambitious and the stress and strain of war prevented its completion.

In late November, AEF [American Expeditionary Forces] General Headquarters (GHQ) deemed additional information necessary before the formation of a tank corps. Therefore, Pershing ordered Majors Alden and Drain of the ordnance department, Captain George S. Patton, the commander designate of the light tank service, and Lieutenant Elgin Braine, Patton's assistant, to study the design, construction, and use of tanks. After observing French tank training and production, these officers submitted their reports to GHQ in early December. Based on the reports and on Pershing's recommendations, the chief of staff ordered the organization of the American Tank Corps in December 1917. A quartermaster officer with more than 20 years of service in the cavalry, Samuel D. Rockenbach, whom Pershing described



Despite a military mission's declaration that tanks were a failure, GEN John J. Pershing, Commander in Chief, American Expeditionary Force, appointed a board to consider further their employment.

as having "special qualifications," became brigadier general and chief of the Tank Corps in France. As chief of the corps, Rockenbach was responsible for training, organizing, and equipping AEF tank units. A number of problems relative to desirable tank types, organization, and

tactics confronted Rockenbach when he reported to GHQ on 23 December 1917.

Procurement of tanks was particularly important and proved most difficult. Throughout 1917 and early 1918, American officials in France expected that the AEF would be largely equipped with tanks produced in the United States. On 22 January 1918, the Americans and British agreed to produce jointly 1,500 Mark VIII heavy tanks. Component parts were to be manufactured in the United States and in England. The tanks themselves would be assembled at a factory in France. But the German 1918 offensive and the competition of the American aviation program for Liberty engines disrupted the successful completion of this agreement; both drained resources destined for tank production. Because the Anglo-American agreement provided only for heavy tanks, light tanks had to be built in the United States.

In February, the War Department cabled GHQ that 100 American-built Renault light tanks would arrive in France by April; 300 would be delivered in May and 600 per month thereafter. During the spring of 1918, the War Department remained optimistic about shipments of American-built tanks to France. But lack of coordination and difficulties in procuring parts plagued production. By June 1918, it became apparent that no useful number of tanks would arrive from American factories until 1919 — too late for the expected allied offensive. But the American Tank Corps did get its tanks. The French agreed to equip fully two American battalions with Renaults. Under the proviso that it be attached to the British Expeditionary Force, Great Britain equipped one battalion with heavy tanks.

The training of tank personnel presented nearly as many problems as procurement. Training procedures for the American Tank Corps followed British policy. Commanders of the tank brigades had responsibility for training all officers, noncommissioned officers, and enlisted men in their commands. Instructors, trained at French and British schools, would assist the commanders with unit training. To ensure uniformity of doctrine, the unit commanders would lead in combat the troops they trained. GHQ established schools on a permanent basis for training instructors and reinforcements. For training unit personnel, each brigade set up temporary courses of instruction.

An officer whose name became synonymous with tanks during World War II deserves much credit for training and organizing the AEF Tank Corps. On 3 October 1917, George S. Patton requested transfer to the tank service. Within 3 weeks, Pershing's chief of staff, James G. Harbord, detailed Patton to duty with tanks, directed him to organize the light tank service, and ordered him to establish a light tank school. Following detached



These National Archives photos of 1918 portray the infant World War I light tank element as it trains for combat. Directed to organize the light tank service and establish a light tank school, LTC George S. Patton began with 10 Renaults and 10 men with marked ability as instructors. Above left, LTC Patton, with MAJ Sereno Brett, inspects his tankers. MAJ Brett later took command of the 304th Brigade (Tank Corps) when Patton was wounded. Above right, pioneer tankers perform maintenance. Below, ready for the CMMI [capability maturity model integration] of yesteryear.



duty with the French, Patton proceeded to the AEF schools at Langres in December 1917, and began preparations for a suitable school, training area, and tank park.

On 9 January 1918, 22 second lieutenants transferred from the Coast Artillery to the Tank Corps. They formed the foundation of the American tank service in France; they were the cadre. Under Patton's direction, this group of officers immediately began training with the French. Instruction concentrated on basic military subjects: weapons, camouflage, and map reading. Mechanical instruction followed shortly. In early February, Patton went to Saint Aignan to recruit enlisted men for two tank companies and a headquarters unit. He looked for men with special qualifications such as chauffeurs, mechanics, and caterpillar tractor drivers. With the arrival of the first troops at Langres on 17 February, training began in earnest. Because of the isolated environment in which tankers operated, their training stressed the necessity for hard discipline, devotion to duty, and esprit de corps.

General Rockenbach had secured 10 Renaults from the French for training purposes. The tanks arrived at Langres on 23 March

1918. Patton, the only American at the schools who had even seen a tank, taught 10 men with marked ability as instructors to drive the tanks. These 10 then instructed small details from each of the companies. Unit exercises began as soon as the troops learned to drive the machines. In these exercises, Patton stressed reconnaissance, gunnery, repair work, and tank-infantry cooperation. As more personnel became available, the tank units at Langres expanded. By 15 August, 900 men and 50 officers had been trained. They formed the 344th and 345th Light Tank Battalions of the 304th Brigade (Tank Corps).

While the light tank units trained in France, the 301st Heavy Tank Center was organized at Bovington Camp, England. In February, this unit, commanded by Lieutenant Colonel Conrad S. Babcock, consisted of 58 unassigned engineer Reserve officers and 38 enlisted men. Early in March, three companies of the 65th Engineers, trained at Camp Colt, Pennsylvania, arrived to fill out the 301st Light Tank Battalion. Training of this heavy battalion progressed along lines followed by the units in France. The original officers instructed the newly arrived engineers using borrowed British heavy tanks. On 23 August 1918, the 301st

departed for the front in France under the command of Major Roger B. Harrison.

During the war, the tactical doctrine for employment of tanks changed very little. From the time of Ernest D. Swinton's pronouncements on the use of tanks in 1915 until the Armistice, tanks remained infantry close support weapons. Several factors contributed to this continuity. Mechanically, tanks remained primitive. They were slow; they were mechanically unreliable; they were easily put out of action. If tanks had difficulty accomplishing their primary mission of infantry support, it was difficult to envisage them fulfilling a more independent role as they did in later years. However, tanks carried out a valuable function in the system of trench warfare. Infantry needed a close support weapon to neutralize hostile machine guns and break through the barbed wire. Perhaps the most important reason that tank doctrine changed very little was because it evolved in a static warfare situation.

American tanks in battle, while not a failure, were something less than spectacular. Only three battalions, the 301st Heavy Tank Battalion and the 344th and 345th Light Tank Battalions, saw action. Mechanical breakdowns, heavy casualties, insufficient numbers of machines, poor liaison with the infantry, and use over difficult terrain hindered the performance of the American Tank Corps in France.

On 5 September 1918, Lieutenant Colonel Patton received orders attaching the 304th Brigade to IV Army Corps for operations against the Saint Mihiel Salient. Assigned to the 1st and 42d Divisions, the tanks' mission was to assist the infantry in attacking the southern edge of the salient. Because of the difficult terrain, the operations order called for the 345th to follow the 42d Division until it passed the Tranchee d' Houblons. From this point, the tanks would lead the foot troops in an attack on the towns of Essey and Pannes. Despite heavy shell fire and deep mud, the battalion carried out the plan. The tanks of the 345th overcame several machine gun positions, destroyed a battalion of German artillery, and captured 30 enemy soldiers.

Operating with the 1st Division, the 344th Battalion succeeded in cutting the barbed wire and engaging a number of machine guns in the vicinity of the Bois de Rate. A gasoline shortage hampered tank operations on 13 September, the second day of the battle; the tanks had consumed more fuel than anticipated because of muddy ground. The tankers spent 14 September attempting to reestablish contact with the infantry. On that day, an eight-tank patrol from the 344th attacked, without infantry support, and dispersed a battalion of German infantry near Woel. This was the final tank action in the Saint Mihiel operation.

Although a lack of serious resistance at Saint Mihiel did not provide an opportunity to demonstrate the full offensive value of tanks, the tankers did provide valuable aid to the infantry. Furthermore, the Americans gained much worthwhile experience in the use of tanks over difficult terrain. During the 4-day battle, the 304th Brigade lost two tanks destroyed by shell fire, 22 ditched, and 14 due to mechanical difficulties. The brigade suffered 14 casualties among its personnel, but only two of these occurred among troops inside a tank.

The Meuse-Argonne offensive, beginning on 26 September, was the largest American operation of the war. In the initial phase, the two American light tank battalions operated with I Army Corps. Originally, the 344th was to support the corps' advance on the front extending from Vanquois to La Harazee. Upon reaching the First Army objective, the 345th would "leap frog" the 344th and continue to support the attack as far as possible.

Serious resistance, especially along the edge of the Argonne Forest, necessitated the use of both battalions by the end of the first day of the offensive. Heavy machine gun fire provided most of the resistance, particularly near Varennes. Although the tanks reached Varennes at 0930 hours on 26 September, the infantry did not arrive until 1330 hours. While getting tanks forward and rallying disorganized troops, the brigade commander, Colonel Patton, was wounded. Major Sereno Brett replaced Patton and led the brigade for the remainder of the campaign.

On 27 and 28 September, the American tanks answered requests for assistance from the infantry. Although coordination was poor, small groups of tanks assisted infantry squads and platoons to reduce enemy strong points. On the 28th, tanks entered and captured Apremont five times before the infantry advanced, consolidated, and exploited this success. From 29 September until 4 October, 89 American tanks supported the attack of the 1st and the 28th Divisions.

During this period, the tankers and infantrymen overcame liaison difficulties and worked well together. In this fighting, the brigade suffered heavy losses in men and equipment because of accurate German artillery fire. Only 30 tanks, many of which were unfit for effective combat because of mechanical trouble, remained in action on the morning of 5 October. The next day, all American tanks withdrew to Varennes for overhaul.

It was apparent that there were insufficient tanks to reequip the entire brigade. Therefore, brigade headquarters formed a provisional company, commanded by Captain Courtney Barnard, and ordered the remainder of the 304th back to the Tank Center at Langres. From 16 October until 1 November, the provisional company remained in corps reserve at Exermont. In their last action of the war, several American tanks of the company participated in the general advance on 1 November in the vicinity of Landres-et-Saint Georges and earned the commendation of the commanding general of the 2d Division.



Dummy tank used for machine gun training. Rockers simulated tank movement.

Somewhat like the 344th and 345th, the 301st Heavy Tank Battalion met with only limited success. Attached to the 2d Tank Brigade of the British Expeditionary Force and equipped with 47 British heavy tanks, the 301st assisted the American II Corps and an Australian corps in an attack on the Hindenburg Line during late September 1918. Of the 34 tanks supporting the 27th Division, only ten actually became engaged in combat. Most of those disabled ran afoul of an old British minefield. Once again, coordination between tanks and infantry was poor. The 2d Brigade operation report concluded, "Due to the fact that the 27th Division had never had an actual operation with tanks, the infantry commanders did not seem to grasp the idea of tanks cooperating with infantry."

In conjunction with the British IX and XIII and the American II Corps, the 301st successfully attacked German positions north of Brancourt on 8 October. The tanks fought through to the final objective, giving effective support to the foot troops. Poor visibility disrupted a II Corps-301st Tank Battalion attack 9 days later; only half of the 20 tanks that started the operation finished. The final attack of the 301st occurred on 23 October when nine tanks assisted two British divisions near Bazuel. The tank commanders reported little opposition and good targets, despite visibility problems and difficult terrain. All nine tanks beginning

the assault rallied at its conclusion. The infantry commanders praised the work of the tanks. Following this operation, the 301st remained in GHQ reserve until the end of hostilities.

Military experts disagreed as to the value of tanks during the war. Skeptics could point to the experience of the three American tank battalions and ask enthusiasts if this was an example of the ultimate weapon. Poor liaison, mechanical breakdowns, heavy tank casualties (123 percent from all causes during the Meuse-Argonne), and their inability to operate in certain situations contributed to the pessimistic view of the value of tanks.

On the other hand, tank enthusiasts found cause for optimism in the success of mass tank attacks such as the British assault at Amiens on 8 August 1918. Luddendorf called this the "black day" of the German army. Sir Douglas Haig, who, in 1917, called tanks "a minor factor under present conditions," said in his final report on the war, "Since the opening of our offensive in August, tanks have been employed in every battle and the importance of them can scarcely be exaggerated."

The debate over the value of tanks continued for nearly 2 decades after the Armistice. During the early postwar years, the experience of tanks from 1915 until 1918 weighed heavily on both sides of the argument.

Chapter II: The Tank Corps Reorganized

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Rapid demobilization followed the Armistice. As soon as possible, the War Department returned troops to the United States where they were discharged. On 11 November 1918, the Tank Corps consisted of 483 officers and 7,700 enlisted men within the continental United States, and 752 officers and 11,277 enlisted men overseas. By May 1919, most of these troops had been discharged.

During late 1918 and early 1919, tank troops from Camp Colt and Tobyhanna in Pennsylvania, and from Fort Benning, Georgia, and Camp Polk, North Carolina, transferred to Camp Meade, Maryland, the Tank Corps demobilization and storage center. Beginning in March 1919, tank troops from overseas began to arrive with their equipment. The French and British wanted to produce new tanks and therefore did not want the models they had loaned to the Americans during the war. At Camp Meade, the Army collected 218 French Renaults, 450 American-built Renaults, 28 British Mark Vs, and 100 Mark VIIIs built at Rock Island Arsenal. The collective worth of these machines was 32 million dollars. These demobilization activities represented the concluding acts of the past war. What about the future of the Tank Corps?

In August 1919, Secretary of War Newton D. Baker ordered General Rockenbach to return to Camp Meade as commandant of the Tank Corps. Subsequently, on December 31, Congress fixed the corps' strength at 154 officers and 2,508 men. Rockenbach protested that this allotment was insufficient to operate in time of war. He maintained that the United States needed at least two tank brigades. But Congress was in no mood to appropriate funds for a large military establishment. Tankers had to be satisfied with a small organization and confine their efforts to improving their service with the means at hand. Congress charged the Tank Corps with formulating sound tactical doctrine, developing improved tanks, and disseminating information on the value of tanks. No one needed to prod tankers into lobbying for their service. Tank Corps officers, particularly George Patton, Sereno

Brett, and General Rockenbach, began to impress upon military and civilian officials the need for tanks in modern warfare.

As commandant, Rockenbach was in a particularly advantageous position to express his views. In testimony before Congressional committees, in articles for military journals, and in speeches for military gatherings, Rockenbach defended the tank's performance during the war and stressed the need for developing improved tanks in the future. During a lecture at the General Staff College, Rockenbach said the Tank Corps had resisted entangling alliances with any of the traditional branches, but its support in combat would be of value to all of them. According to Rockenbach, the use of tanks reduced infantry casualties. He thought that function and design should govern Tank Corps needs in the future. To carry out their mission, tanks should be designed to cross any defensive position, go anywhere the infantry could, and possess sufficient armament to cope with protected hostile machine guns.

Despite the necessity of close association between tanks and infantry, Rockenbach opposed permanent attachment of tank units to infantry divisions. He maintained that tanks could not be used in every situation and should not be wasted on a division operating in unfavorable terrain. Before a Senate subcommittee, Rockenbach defended the wartime tank organization. He said that the Tank Corps should remain a separate entity assigned to GHQ for use as the tactical situation dictated. Because of their special nature, tanks needed their own organization to coordinate the procurement of proper equipment with the Ordnance Department, conduct the necessary specialist training, and plan tank-infantry operations with GHQ.

In response to a lecture by General Rockenbach, Major General Charles P. Summerall, an outstanding wartime corps commander, wrote, "Far from disagreeing with any part of the lecture, the only comment I heard ... was that you had presented the subject in a very conservative manner and that all were in hearty

sympathy with the development and use of the Tank Corps." Some of the Tank Corps' own officers agreed with Summerall that Rockenbach was too conservative. Rather than experimenting with and developing new tanks, Rockenbach sought to maintain the status quo.

Patton's biographer wrote that upon return to the United States after the Armistice, Patton vigorously promoted research, development, and training: three activities essential to the improvement of tanks. Soon after arriving at Camp Meade, Patton realized that several forces, including General Rockenbach, combined to thwart his efforts. A close friend of Patton's during this period, then Lieutenant Colonel Dwight D. Eisenhower, expresses similar sentiments in his book, *At Ease!*

During the war, Eisenhower commanded the tank training center at Camp Colt. After the end of the war, he went with the tank units to Camp Meade. On the controversy surrounding tanks, Eisenhower writes that he, Patton, and several other young officers disagreed with accepted doctrine. They thought tanks should be fast and should attack in mass formations. This group of officers conducted experiments with World War I tanks and held demonstrations for War Department officials. Several of the group, including both Patton and Eisenhower, wrote articles for military journals expressing their "revolutionary" ideas. But the War Department disapproved of their divergence from established doctrine. Eisenhower writes, "I was told that my ideas were not only wrong, but were dangerous, and that henceforth I was not to publish anything incompatible with solid infantry doctrine." Confronted with such pressures, both Patton and Eisenhower soon left the tank service.

Official War Department doctrine called for tanks to be used as close support weapons for the infantry, thus the wartime practices for the employment of tanks would continue. A board of officers, convened by the War Department in 1919 to study tank tactics, recognized the value of tanks as an adjunct to the infantry but declared them incapable of independent action. To emphasize further the association of tanks and infantry, the board maintained that the "Tank service should be under the general supervision of the chief of infantry and should not constitute an independent service." Their recommendation that tanks be under infantry control broke with the wartime arrangement by which the Tank Corps retained autonomy from branch authority. Peacetime exigencies gradually pushed the War Department into placing tanks under the control of the chief of infantry.

Ultimately, the question of a separate Tank Corps came before Congressional committees holding hearings on the reorganization of the Army. The question raised in these committees was not over the value of tanks, but over the necessity for a separate service. General Peyton C. March, the chief of staff, said that American military authorities were fully convinced of the offensive value of tanks. March himself believed the Tank Corps was "technical enough and important enough to keep as a separate arm." Disagreeing with March, General Pershing expressed the belief that tanks should be under the control of the chief of infantry; they were an adjunct to that arm. For Congress, the question of a separate tank service became one of economics. Could the government afford an independent tank organization in view of the reduced postwar military budgets?

Congressman Harry E. Hull of Iowa presented the problem as follows: "I can see how perhaps in the case of war there might be some need of a separate organization for tanks, but I am unable absolutely to see any reason during peacetime for the creation of the overhead that would have to be established to give you a separate organization." Evidently, the majority of Congress



Brigadier General S.D. Rockenbach, commandant of Tank Corps, defended the tanks' performance and stressed the need for improving them.

agreed with Mr. Hull. Section 17 of the National Defense Act, as amended by Congress on 4 June 1920, assigned all tank units to the infantry.

In tactics, as well as organization, the reorganization of 1920 had a tremendous impact on tank development. Under infantry control, tanks naturally had to conform to infantry tactics, which meant continuing the close support mission of World War I. Independent tank attacks had no place in infantry doctrine.

A conference held by the General Service Schools at Fort Leavenworth, Kansas, in October and November 1921, discussed the organization and tactics of infantry tanks. The conference report, together with comments elicited from other officers and included in the report, indicated post-1920 thought on the use of tanks. To secure close cooperation between tanks and infantry, the report proposed assigning light tank companies as organic components of infantry divisions. Additional tank units would compose a GHQ reserve. This would ensure the maximum use of a limited number of tanks. GHQ tanks, distributed in depth, would be allotted to the corps delivering the main assault. Terrain and the mission of the assault divisions dictated the distribution of available tanks. Departing from established doctrine, the conference suggested the allotment of additional machine guns to each tank company. In a defensive situation, these units could serve as machine gun companies. Again departing from normal doctrine, the conference maintained that in certain situations tanks might successfully assist horse cavalry in performing its missions.

Criticism of this report came from several War Department sources. On 9 December 1921, the Tank Board met at Fort Meade to consider the report of the General Service Schools conference. This board criticized the proposal for using tank companies as machine gun units. Tankers required additional training,



Photo: Robert J. Icks Collection

At the end of World War I, 100 Mark VIII tanks were collected at Fort Meade. At that time, the United States had almost 3,000 Mark VIIIs that had cost \$85,000 each to build.

equipment, and manpower to carry out any dual missions. The board maintained that tanks were offensive weapons only. According to the Infantry Board, the number of tanks available during wartime would not be sufficient to maintain division tank companies, as well as GHQ tank units. Furthermore, divisions might not operate in terrain suitable for employment of tanks. Tank companies organic to infantry divisions might prove more of a burden than an asset. Writing to the commandant of the General Service Schools, the adjutant general charged that instructors at the conference failed to deal with existing organization, units, and arms. Instead, they made unauthorized assumptions regarding the tank service. The adjutant general said that uniformity of tactical doctrine cannot exist unless all schools based their teachings on existing organization. Tactically, tanks served as an auxiliary of the infantry. According to the adjutant general, any discussion of tank tactics had to begin with that premise.

Even before the reorganization, the Army took steps to ensure closer cooperation between tanks and infantry. Early in 1920, the Secretary of War, in response to a request by the 1st Division commander, General Summerall, assigned one tank company to each infantry division and assigned one battalion of tanks to the Infantry School at Fort Benning. After reorganization, the units retained at Camp Meade included the 16th Tank Battalion (Light), the 17th Tank Battalion (Heavy), and a maintenance company. Meade was also the location of the Tank School and the hub of postwar tank activities. In the event of war, Meade would have become a mobilization, training, and replacement center for tank units. Four light tank companies and six separate light tank platoons were the remaining tank units assigned to Regular Army posts. In addition, the National Guard had fifteen light tank companies located throughout the United States. All tank organizations, National Guard and Regular Army, were organic to infantry divisions.

Lack of funds restricted, but did not halt, the postwar activities of American tank units. For fiscal year 1921, Congress appropriated only \$79,000 for tank units. During the war, tank crews operated their machines for the entire day, but peacetime budgets dictated that tanks be driven for a few hours at most because of a lack of funds to buy gasoline. Despite the inconvenience caused by tight budgets, tank units conducted important training and attempted to stimulate interest in tanks. A letter from First Lieutenant Eugene F. Smith, platoon leader of the 1st Platoon, 9th Tank Company at Fort Devens, Massachusetts, to now Colonel Rockenbach aptly reflected the difficulties and nature of tank training during the twenties.

Smith's platoon moved from winter quarters to Fort Devens between 12 and 17 May 1924. Upon arriving at its training area, the platoon constructed a tank park to house and protect its vehicles. Beginning on 9 June and continuing for three weeks, the tanks helped in clearing trees and land for a drill field. This was valuable experience because it gave all hands an opportunity to drive the tanks under difficult conditions. After completing the preparation of their training area, the platoon held a test mobilization on 3 July. Despite only 24 hours notice, the test went well.

From 7 to 9 July, two tanks of the platoon assisted the 5th Infantry in conducting demonstrations for an Elks convention in Boston. During the second and third weeks of July, the platoon assisted in the summer training of the 26th Tank Company of the Massachusetts National Guard. Several reserve tank officers trained with the platoon from 21 July until 2 August.

Tactical exercises with infantry regiments constituted the unit's primary activity in the latter part of July. On 15 and 16 July, the unit participated in field problems with the 13th and 5th Infantry Regiments, which served as part of the regiments' annual tactical inspections. During both exercises, the tanks moved about eight miles under their own power and impressed the in-

fantry officers present with their ability to keep up with the march column.

On 24, 28, and 31 July, Smith's platoon participated in the tactical inspection of the 18th Infantry Brigade, which was observed by the I Corps commander and some War Department officials. To advertise the mobility and strength of tanks, the platoon conducted a demonstration for the visiting dignitaries. One tank crossed a trench system, drove across a bridge, knocked down a tree, and then returned to the starting point. Smith noted, "We received some very good publicity in the Boston papers because of it."

The platoon held a demonstration of tank-infantry coordination in an attack for ROTC [Reserve Officer Training Corps] and Organized Reserve Corps personnel on 1 August. Following this exercise, several officers expressed their surprise that tanks could move so rapidly and assist the attacking infantry so well. More than just training his own men, Smith attempted to publicize the tank and impress other officers with its possibilities. The performance of the tanks in these summer maneuvers convinced many officers that they could rely on tanks in any combat situation. Smith concluded his letter to Rockenbach, "They don't have to know that on one problem we had to stop and put a new fan belt on one tank, a new water pipe from the pump to the radiator on another, and stop every half mile and fill the radiator on another because it sprang a bad leak."

The most important tank activity of the twenties was the Tank School at Fort Meade. Among its more important functions, the school trained personnel for tank units such as Lieutenant Smith's platoon. Although the enlisted men received instruction only in their specialties, the officers took a more comprehensive course. Included in the officers' program was instruction on motors, ignition systems, battery maintenance, vehicle chassis, light tanks, heavy tanks, weapons, tank marksmanship, tank combat practice, tank history, tank organization, tank tactics, reconnaissance, intelligence, and chemical warfare. The courses were a balance between theory and practice. The National Guard and Reserve officer courses began in March of each year and continued for 3 months. The Regular Army officer course was of 10 months' duration. Specialty schools for enlisted men lasted about 3 months. After graduation, the officers served a tour of several years with a tank unit. Most of the enlisted students came from one of the units at Meade and then returned to their former units upon graduation. But the type of training received by the men created some problems. The skills developed at the school were valuable in a society becoming rapidly motorized and many Tank School graduates left the service to take higher paying civilian jobs. To retain trained personnel, the Army began to assign students, who had at least 2 years remaining on their enlistments, to the school.

Another activity located at Meade and closely associated with the school was the Tank Board. Originally organized in 1919 as the Tank Corps Technical Board, this body conducted tests, undertook studies, and made recommendations concerning tanks, tank equipment, tank unit transportation, and similar technical matters. Following the reorganization in 1920, the board disbanded until 1924. In October of that year, the commandant of the Tank School, with the approval of the chief of infantry,

appointed four permanent members of the Tank Board. This board cooperated with the Tank School, the Ordnance Department, and other agencies concerned with improving tank development. Army Regulation 75-60, *Infantry, Tank Board*, 30 April 1926, reorganized the board. Rather than four permanently assigned officers, the board now consisted of the commandant of the Tank School, three officers designated by the chief of infantry, and one officer representing the chief of ordnance. In 1929, the chief of infantry, on recommendation of the president of the board, named a recorder and two other members. Similar to the Infantry Board, the Tank Board became a part of the Office of the Chief of Infantry.

For initial equipment requirements, the Tank Board prepared performance specifications. Upon request of the chief of infantry, the proper supply facility procured the item and sent it to the board for tests. The board exercised a coordinating role between the tank troops and the supply agencies. Following the conclusion of tests, the board issued a report on the acceptability of the particular piece of equipment. Among the items considered by the Tank Board were communications systems, maintenance equipment, accompanying guns for tanks, a trench-digging tank, tank machine guns, and development of new tank models. Members of the board and the test officers worked on projects individually. At frequent meetings, the board as a whole reviewed and reported on the individual projects.

The postwar years were both a time of transition and a period of stagnation for American tank development. Although the 1920 reorganization changed the organizational structure of the Tank Corps, small postwar military budgets limited activities. Among other things, this hindered production of new, improved tanks. But a number of officers retained an interest in tanks. They wrote for military periodicals, tried to impress their fellow officers with the capabilities of tanks, and like Lieutenant Smith, attempted to "advertise" tanks. By the end of the decade, the Army was contemplating more positive steps for improving the American tank service.



A six-ton tank crashes through old barracks at Fort Meade. Demonstrations such as these were organized by tank enthusiasts to impress upon the public the usefulness of the tank. Despite favorable newspaper reports, funds provided were scanty.

Photo: Robert J. Icks Collection

Chapter III: The Experimental Mechanized Forces

(Reprinted from the May-June 1969 issue of *ARMOR*)

By the latter part of the twenties, as the mechanical capability of the tank increased, military officials became more farsighted about its use. Increased mobility and heavier firepower enabled tanks to assume a more independent role.

The chief of infantry and thus the officer having operational control over American tanks, Major General Robert H. Allen wrote in 1927, "My studies at the General Service Schools at Fort Leavenworth have convinced me that the tank was the only new ground weapon born during the World War that would, in future wars, play a role as conspicuous as the airplane, being the only weapon that could be relied on to overcome the machine gun and prevent a recurrence of the stabilized condition of 'trench warfare' similar to the Western Front."

Even the cavalry saw possibilities for tanks. In 1927, Major General Herbert O. Crosby, the chief of cavalry, recommended incorporating tank units into cavalry divisions and assigning antitank weapons to cavalry regiments. Colonel Samuel Rockenbach, commander of the infantry tank service, proposed that the cavalry and other branches, as well as the infantry, contribute to tank development. He said, "I submit that the recent developments by the British will have an effect in modifying our ideas in regard to tanks and that the role of tanks is no longer a special weapon for infantry, but that it is just as important to cavalry divisions, corps, and the Army." The British efforts, not the prodding by Americans, precipitated an important change in American tank development.

In early 1927, Secretary of War Dwight Davis witnessed the maneuvers of the British Experimental Mechanized Force at Salisbury Plain. This force, which was composed largely of tanks and other cross-country mechanized vehicles, impressed him so

much that later in the year he ordered the organization of a similar American unit to serve as a military laboratory. Including troops from all branches, infantry, cavalry, tanks, artillery, air, ordnance, and supply, the force would be self-sufficient. Davis authorized the commanding officer to ignore existing regulations concerning organization, armament, and equipment. By conducting tests, the War Department sought to develop proper equipment and correct doctrine for the mechanization of additional units. General Charles P. Summerall, then chief of staff, ordered the operations and training section (G3) of the general staff to undertake a study of mechanization, which would serve as the basis for the organization of a temporary experimental mechanized force. On 30 December 1927, Summerall approved a preliminary G3 report for the organization of that force. Elements of the mechanized force would organize and train at their permanent stations and then assemble at Fort Meade during the summer of 1928.

An infantry tank officer and former commandant of the Tank School, Colonel Oliver Eskridge, commanded the Fort Meade force. Units assigned to the experimental mechanized force included the 16th and 17th Tank Battalions, one separate tank platoon, one battalion of the 34th Infantry, an armored car troop, one battalion of the 6th Field Artillery, an engineer company, a signal company, a medical detachment, the 1st Ammunition Train, a chemical warfare platoon, an ordnance maintenance platoon, and a provisional motor repair section. By 3 July 1928, the entire force had assembled.

Major Douglas T. Green, plans and training officer for the unit, outlined the program of instruction, training, and tactical exercises. From 9 to 14 July, training would consist of instruction on



equipment, inspection by the commanding officer, and instruction in short route marches to determine proper methods and procedures for road travel. Following this preliminary training, the entire organization would make a 5-day march to Aberdeen Proving Ground and Carlisle Barracks, and then return to Meade. Such an exercise would give valuable experience in determining proper grouping in march columns; economical rates of march; means of command, supply, and reconnaissance while on the march; and methods of conducting night marches. During the latter part of July and into August, the unit would conduct tactical training for offensive operations. From 27 August until 15 September, the schedule called for the solution of field problems to test the tactics taught during the preceding training period.

Although the unit generally followed the training program, difficulties arose. Obsolete wartime equipment, which often broke down, proved the greatest handicap. Insufficient equipment and improper balance made the force a poor demonstration unit. Colonel Eskridge requested that the War Department cancel a proposed visit by foreign military attachés because he feared that a poor performance by his troops might embarrass the entire Army.

Despite its imperfections, the experimental mechanized force could not be considered a failure. Both Eskridge and the assistant chief of staff G3, Brigadier General Frank Parker, agreed that the unit provided useful technical and tactical information. By the end of September 1928, the force had accomplished its mission. Therefore, on 19 September, Parker recommended to the chief of staff that the unit be disbanded as originally planned. General Summerall approved this on the twentieth. After 1 October, all the component units of the experimental mechanized force returned to their home stations.

In the spring of 1928, while plans progressed for the organization of the experimental unit, the War Department began planning for a long-range mechanization program. General Parker submitted a report in March 1928, which emphasized the necessity of firepower and mobility to achieve success in modern warfare. Parker regarded tanks as a means of restoring the power of decision to battle. During World War I and after, tanks were tied to the infantry, thus reducing their mobility and shock effect. Instead of this, Parker believed that they should drive forward and attack hostile reserves and rear installations. Not adopting an extreme pro-mechanization position, he considered entirely mechanized armies inconceivable. They were prohibitively expensive, logistics support would be difficult, and machines could not operate in all kinds of terrain and weather. But mechanized units were valuable additions to any offensive operation.

The potential uses of mechanized units outlined in Parker's report included operating as the spearhead of an important attack, as a counterattack force, and as the advance or flank guard of strategic formations. Proper organization was necessary for any mechanized force. These required sufficient striking power to



Colonel Adna R. Chaffee

penetrate the enemy's defense and disorganize his reserves. But mechanized units could not be so large as to become unwieldy. Tank companies comprised the principal striking power of any mechanized force. As envisaged in Parker's report, light tanks, the leading element in an assault, attacked weak points in the defense; enemy flanks were particularly vulnerable. Self-propelled artillery and medium tanks supported the advance by overcoming strong points and widening gaps in the enemy's line. Infantry, brought forward in mechanized vehicles, consolidated the ground captured by the tanks. Supply, maintenance, and other support elements were mechanized in order to keep up with the advance.

In concluding his report, Parker made several specific recommendations for the long-range development of mechanization in the United States Army. He proposed that procurement of equipment for mechanized units, including light and medium tanks, a reconnaissance car, cross-country vehicles for infantry and support units, and self-propelled artillery, commence during the 1930 fiscal year. Congress had to pass the necessary legislation to establish one permanent mechanized unit during fiscal year 1931. This unit would use both modern and obsolete equipment. During 1931 and 1932, the obsolete equipment would progressively phase out. Secretary of War Davis approved Parker's report as the basis for future development and organized a board of general staff officers to prepare the details for future action.

Among those appointed to this board was Major Adna R. Chaffee Jr., a cavalryman and a member of the G3 section of the War Department General Staff. From the time of his assignment to G3 in June 1927 until his death in the summer of 1941, Chaffee remained one of the leading American advocates of mechanization. Before 1927, Chaffee knew nothing about tanks. Realizing that G3 was beginning studies on mechanization, Chaffee learned all he could about the subject. At Rochester, he witnessed the demonstration of a new tank, capable of 18 miles per hour, built by James Cunningham and Sons. Chaffee also saw a test of the Christie tank, which could go 42 miles per hour. These demonstrations convinced him that tanks should not be tied to the infantry, advancing at a walking pace. The maneuvers of the British mechanized units also aroused his interest. At this time, a friend of Chaffee's, Charles G. Mettler, was serving as military attaché to Great Britain. When Mettler visited Washington in 1927, Chaffee questioned him about British efforts in mechanization. Some years later, Mettler recalled, "He loaded me with a terrible list of things he wanted to know and expected me to find out for him when I returned to London." His own observations and information received from sources, such as Mettler, stimulated Chaffee to promote mechanization. Although not immediately the moving force in American mechanization (he ranked sixth in seniority on the Mechanization Board appointed in 1928), Chaffee's influence gradually increased and his interest never waned. But the development of mechanization cannot be attributed to any one person. Progress was slow and the result of the efforts of many officers.

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Photo: MG R.W. Grow Collection

Colonel Van Voorhis and Major Sereno Brett, speak into a Paramount Sound News microphone at Fort Eustis in 1931. To the left of the tree stands Major R.W. Grow who later, as a major general, commanded the 6th Armored Division in World War II.

Initially, the 11-man Mechanization Board met on 15 May 1928, in Room 346 of the State, War, and Navy building. Thereafter, it met from time to time as work demanded. Members of the board, who were from all branches of service, witnessed demonstrations of new tank models and the exercises of the experimental mechanized force. In its final report, issued in October 1928, the board reached conclusions about mechanization similar to General Parker's report. The group also outlined a tentative program for future development.

The board recommended the organization of a unit similar to the recently disbanded experimental mechanized force to serve as a technical and tactical laboratory. A force of 131 officers and 1,896 men would be organized into a headquarters, one light tank battalion, two mechanized infantry battalions, one field artillery battalion, an engineer company, and a medical detachment. In order that tactical doctrine would keep pace with mechanical developments, the board proposed supplying the force with the latest equipment. Although not recommending formation of a separate branch, the board emphasized the necessity of forgetting branch rivalries and traditions to make progress in the field of mechanization. With one exception, all of the branch chiefs concurred in the report. On 31 October 1931, the secretary of war approved the recommendations, but due to budgetary considerations, postponed organizing a mechanized force from fiscal 1930 until fiscal 1931.

Major General Stephen O. Fuqua, the chief of infantry, was the exception among the branch chiefs concurring in the report. Earlier, he had disagreed with the conclusions of General Parker's report on mechanization. Fuqua's criticism was based strictly on branch rivalry; exactly the sort of thing the Mechanization Board wanted to avoid. A separate mechanized force threatened the complete control over tanks, which the infantry had since 1920. Fuqua protested to Parker, "The tendency in this study to set up another branch of the service with the tank as its nucleus is heartily opposed. It is as unsound as was the attempt by the

Air Corps to separate itself from the rest of the Army. The tank is a weapon and as such it is an auxiliary to the infantryman, as is every other arm or weapon that exists." According to Fuqua, the authority for tank development should remain where it was — with the chief of infantry. Despite the general's protests, the War Department proceeded with its plans for mechanization.

In his 1930 annual report, Chief of Staff General Summerall, reaffirmed the Army's commitment to proceed with formation of a mechanized force. He declared, "From being an immediate auxiliary of the infantry, the tank will become a weapon exercising offensive power in its own right." Recognizing the importance of a suitable tank force, Summerall ordered that the proposed mechanized force become a permanent unit, not a temporary or experimental organization. But the development program, so carefully planned, ran into unexpected difficulties.

The inability of the Ordnance Department to produce a tank acceptable to the Tank Board, and a lack of funds, delayed the organization of the mechanized force. Failure to produce a suitable tank was particularly crucial because tanks formed the nucleus of the force. Everything else might disappear and the tanks could still accomplish at least part of the mission; however, without tanks, the remainder of the force was useless. Until the late twenties, the Army used surplus wartime equipment. As the experience of the experimental mechanized force indicated, this equipment was obsolete.

Unfortunately, the advent of the Great Depression paralleled the decline of wartime materiel. Retrenchment and stabilization of military budgets made a modernization and reequipment program difficult. The War Department had to determine how best to maintain the Army with limited funds and availability of funds often affected policy. Ordnance Department estimates for fiscal year 1932 reflected this trend. Priorities for the submitted ordnance budget of \$2.4 million were for limited service tests and procurement of semiautomatic rifles, 3-inch antiaircraft guns, and as many tanks as possible with the remaining money.

When the final War Department budget directive reduced the amount to \$1 million, the general staff, which determined priorities, decided to use the money for the highest priority items: the rifles and only a few tanks. The staff decided that progress in tank development warranted the purchase of only a few tanks to test tactics and keep up with the latest technology. Because of these decisions, the mechanized force, when finally organized at Fort Eustis in November 1930, used unsuitable, obsolete equipment.

On 24 November 1930, Colonel Edward O. Croft, the acting assistant chief of staff, G3, selected units for the force. Company A of the 1st Tank Regiment, equipped with six World War Renaults, five modernized Renaults, and four T1E1 tanks, formed the nucleus of the unit. One armored car troop with ten vehicles served as the reconnaissance element. One battery of the 6th Field Artillery, equipped with obsolete service trucks, not self-propelled guns as the War Department studies advocated, provided fire support. Equipment problems also plagued the engineer company assigned to the force as its transportation initially consisted of horse-drawn wagons. Fifteen light tanks, 10 armored cars, seven tractors, 66 trucks, 22 automobiles, and less than 600 men composed the Mechanized Force.

General Summerall selected Colonel Daniel Van Voorhis as commander of the unit. Van Voorhis, a career cavalry officer and recent (1929) graduate of the Army War College, had no previous experience with tanks. As executive officer, Summerall picked Major Sereno E. Brett, a former wartime commander of the 304th Tank Brigade. During September 1930, Van Voorhis, Brett, and Chaffee, now head of the G3 troop training section, visited Aberdeen Proving Ground, Holabird Quartermaster Depot, and Fort Eustis. They conferred with officers at these posts relative to the equipment and organization of the Mechanized Force. The chief of staff based the tactical and training missions of the force on the findings of these officers. In combat, the Mechanized Force would execute missions presenting an opportunity for tactical and strategic mobility and quick, hard striking power. The training mission of the unit was to determine the proper tactics involved in the operation of fast tanks with other mechanized and motorized arms. From 1 November until 31 December, the force would organize and conduct individual training. Unit training and combined drills to perfect teamwork followed. Beginning in March and continuing until the end of the fiscal year in June, the unit planned to hold field exercises and maneuvers with troops of other arms.

During the period from 1 November 1930 until 30 June 1931, the Mechanized Force carried out its proposed training schedule. The 34th Infantry (Motorized) and the Air Corps Tactical School assisted in some of the maneuvers. Operations consisted of command post exercises, field problems, maneuvers, demonstrations, and ceremonies. Among the exercises were night tactical and strategic marches, offensive combat against entrenched infantry, offensive operations against another mechanized force, attacks involving wide turning movements, seizure of key positions, and operations as a covering force for a larger unit.

All of the missions executed by the Mechanized Force emphasized its mobility. Traditionally, cavalry was the branch of mobile warfare, but during the twenties, the cavalry had done little in the field of mechanization. Recognizing these facts, General Douglas MacArthur, who became chief of staff on 21 November 1930, ordered the Mechanized Force disbanded and directed all branches, in particular the cavalry, to mechanize as far as possible. This decision affected the development of American mechanization down to the organization of the Armored Force in 1940.

Bibliographical Note

Material for Chapter I of this article came from a number of sources. The great bulk was derived from materials in the National Archives at Washington. Operations reports of the various tank units, a history of the 304th Brigade, and the AEF Adjutant General File were all found in Record Group (RG) 120, which contains the complete AEF records. The War College Division File (RG 165) was also helpful for information on planning. Another good source included volumes in the U.S. Army in the World War, 1917-18 series published by the Department of the Army in 1948. The volumes, entitled Organization of the AEF and Reports of the Commander-in-Chief, AEF Staff Sections and Services contained reports by Rockenbach and Patton on tank activities during the war. A pamphlet published in 1918 by the War Plans Division, Instructions for the Training of the Tank Corps in France, was good for data on training. Among the secondary sources used were J.F.C. Fuller's Tanks in the Great War (1918), Arch Whitehouse's Tank (1960), and Ladislav Farago's Patton (1963). The quote from Douglas Haig came from E.W. Shepard's Tanks in the Next War published at London in 1938.

The author also used several sources in preparing Chapter II. Foremost were records in the National Archives. Departmental memos, reports from the various conferences considering tanks, and some personal correspondence were found in Record Group 94 (The Adjutant General File) and Record Group 177 (The Chiefs of Arms File). Other primary sources included Congressional documents such as the Hearings Before the House Military Affairs Committee, Vol. 1 (1919) and the Reorganization of the Army Hearings, Vol. I (1919); both of these volumes were published from the records of the 66th Congress, 1st Session. War Department annual reports also provided valuable facts and figures about tank units. Three Infantry Journal articles furnished information on tank activities during the twenties: William E. Speidel, "The Tank School," June 1925; "The Tank Board," August 1926; and Ralph E. Jones, "The Tank School and Tank Board." The Farago biography of Patton and Eisenhower's At Ease! (1967) gave useful insights into the activities of these officers.

Material at the National Archives also constituted the primary source for Chapter III. Memos by branch chiefs, assistant chiefs of staff, and the adjutant general were found in the Adjutant General File, Record Group 94. Operations reports of the mechanized units and the report of the Mechanization Board were also in this file. Additional material was found in RG 177, the Chiefs of Arms File. General Chaffee's obituary in the April 1942 West Point Assembly, written by Charles G. Mettler, provided some useful information. "The Impact of the Great Depression on the Army, 1929-36," an unpublished dissertation from Indiana University by John W. Killigrew, was also very good. War Department annual reports contain data on tank development and outline overall policy.



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THE SEVENTH CAVALRY BRIGADE

by **Brigadier General Adna R. Chaffee,**
Commanding the Seventh Cavalry Brigade

(Reprinted from the November-December 1939 issue of *The Cavalry Journal*)

As early as December 1938, information was received to the effect that at least part of the Seventh Cavalry Brigade would engage in the First Army maneuvers, which were scheduled to take place during the month of August 1939. Whether or not the brigade would participate in its entirety was predicated on the amount of funds which were to be made available.

Later on in the winter, it was announced that the whole brigade would take part in the maneuvers and that the maneuver area would be in the vicinity of Plattsburg, New York, instead of Pine Camp as planned originally.

As plans for the maneuvers progressed, it was found that the funds allowed the First Army for gasoline and oil expenditures would be insufficient to permit the track and halftrack vehicles of the brigade to march overland to and from the maneuver area, but that an ample allotment for rail movements did exist. Therefore, it would be necessary to ship vehicles by rail.

During the first part of June, two brigade staff officers made a reconnaissance of the proposed route of march from Fort Knox to the maneuver area. En route, the suitability of roads was determined, campsites were selected, and arrangements made for the purchase of supplies. While in the maneuver area, the brigade commander, who had flown to Plattsburg, and these officers selected the campsite the brigade was to occupy during the maneuvers. Although the First Army supply personnel were not present at Plattsburg so far in advance, it was found possible also to make preliminary contracts for gasoline and oil to be supplied during the maneuvers, and to make arrangements with the railroad authorities for unloading the track and halftrack vehicles on arrival at Plattsburg.

Since the railroad loading facilities at Fort Knox were inadequate for such a movement, it was decided to load all vehicles to be shipped in Louisville. Accordingly, on 1 August, 112 combat cars from both cavalry regiments, 21 halftrack machine gun personnel carriers of the 1st Cavalry, and 28 halftrack vehicles of the 68th Field Artillery, with the eight 75mm howitzers belonging to the two halftrack batteries, were marched to Louisville and loaded for shipment on 77 flat cars.

The next day, 2 August, the brigade commenced its march overland to the Plattsburg area with all of the wheeled vehicles, and with the personnel of its track and halftrack vehicles carried in trucks. There was a total of 480 vehicles in the column; and the total distance of 1,010 miles was completed in six marches. The strength of the brigade was approximately 2,300 officers and men. The following was the itinerary:

- August 2d — Fort Knox to Hamilton, Ohio — 188 miles.
- August 3d — Hamilton, Ohio, to Ashland, Ohio — 175 miles.
- August 4th — Ashland, Ohio, to Erie, Pennsylvania — 166 miles.
- August 5th — Erie, Pennsylvania — layover.
- August 6th — Erie, Pennsylvania, to Rochester, New York — 164 miles.
- August 7th — Rochester, New York, to Pine Camp, New York — 172 miles.

Below, combat cars arrive at Jeffersonville Depot, Indiana.



IN THE FIRST ARMY MANEUVERS



- August 8th — Pine Camp, New York, to Black Brook, New York — 145 miles.

Display and demonstration of 7th Cavalry Brigade for 1st Division.

TERRAIN OF THE MANEUVER AREA

The maneuver area was a strip of land approximately 20 miles from east to west and 30 miles from north to south located west of Lake Champlain. The eastern portion along Lake Champlain was gently rolling country gradually sloping away and upward into the Adirondack mountains to the west. The mountainous section, which constituted about two-thirds of the area, was heavily forested and extremely rough and broken. Three more or less parallel river valleys — the Ausable, Salmon, and Saranac ran east and west through the area (see sketch 1). All in all, this country, with its extremely limited amount of free maneuverable area, surrounded as it was by dominating mountains, and with its numerous rivers and lakes, constituted about as difficult a locality as could have been chosen for mechanized operations.

UNITS PARTICIPATING

The following units participated in the First Army maneuvers:

- Provisional Blue Corps, which included 1st Division; 18th Infantry Brigade; 7th Cavalry Brigade with the brigade Headquarters and Headquarters Troop, 1st Cavalry, 13th Cavalry, 68th Field Artillery, 12th Observation Squadron, 19th Ordnance Company (Maintenance), Company E, 5th Quartermaster Regi-

ment (Maintenance), Detachment Medical Corps, and Company E, 1st Engineer Regiment (attached for maneuvers only); 97th Observation Squadron; and 2d Battalion, 25th Field Artillery.

- I Corps with its 26th and 43d Divisions.
- II Corps with its 27th and 44th Divisions.
- Miscellaneous Army and corps troops, which included 101st Cavalry, 101st Signal Battalion, 197th Coast Artillery (AA), 212th Coast Artillery (AA), Battalion 66th Infantry (Light Tanks), 29th Ordnance Company, 8th Photo Section, 1st Radio Intelligence Company, and 51st Signal Battalion.

On account of the expansion requirements of the Air Corps, there was no combat aviation of any kind available for the maneuvers. Only arms and equipment as authorized by the tables of basic allowances were used. No assumptions were permitted.

After the arrival in the maneuver area, the period 9 to 20 August, inclusive, was spent by the brigade in establishing camp and conducting troop, squadron, regimental, and brigade problems. In addition, the brigade gave demonstrations for the 1st Division, the 18th Infantry Brigade, and the 26th, 27th, 43d, and 44th Divisions.

out at 1200 hours, 23 August. Elements of the 1st Division in motors were soon near Peasleeville.

Under the conditions of the problem, the 7th Cavalry Brigade arrived at Black Brook at 1200 hours, 23 August, and came under the control of the Provisional Corps. The mission given the 7th Cavalry Brigade was to march to the northeast prepared to attack the hostile left (south) flank or rear.

As to the operation of the 7th Cavalry Brigade in the Army maneuver, it is thought that it would be more interesting for this account to come from a source other than a member of the brigade. Major Rufus S. Ramey, cavalry, an instructor at the Command and General Staff School, was detailed by the War Department for duty both as an umpire and observer, and has kindly given his consent for the following extract from his report to be quoted in this article:

"It had been anticipated that black would make a strong thrust north of the Saranac. Since a river crossing in the vicinity of Elsinore was required as a training exercise, it became necessary to stop, arbitrarily, the rapid advance of elements of the 18th Infantry Brigade north of the Saranac. Immediately south of that river, however, the black 101st Cavalry moved rapidly to the west, gained contact with the 18th Infantry Brigade, and very effectively delayed its advance throughout the afternoon.

"On its front, the 1st Division made very effective use of motorized detachments by way of the Salmon River Valley, Patton School, and Calkins School, at which point junction with the 7th Cavalry Brigade was established about 2:30 pm, 23 August (see sketch 3).

"In its front, the 7th Cavalry Brigade reconnaissance elements quickly made contact with black motorized detachments in the vicinity of Clintonville, to the north thereof and near Harkness: developed the fact that the Clintonville-Harkness defile was effectively blocked by demolitions, where black had apparently concentrated his antitank efforts. However, the parallel trails to the east and west of this defile, over Cold Spring Mountain and Arnold Hill, were neglected and permitted the mechanized cavalry to debouch into the more favorable terrain to the northeast of Harkness.

"While reconnaissance elements had cleared the Clintonville-Keeseville defile of hostile motorized and antitank detachments and were operating well to the north toward Lapham Mills, the mechanized brigade commander determined late in the afternoon to concentrate his effort to the northeast toward Peru and eventually against the south flank and rear of the hostile main force. The afternoon had seen a succession of isolated actions against enemy delaying detachments operating in the almost continuous defiles of this section.

"Shortly before dark on the 23d, the 13th Cavalry was moving to the northeast of Cold Spring Mountain and covering the brigade right flank by detachments in and north of Keeseville. The 1st Cavalry, by a double envelopment was successfully occupying Peru. At this time (about 8:00 pm), the commanding gener-

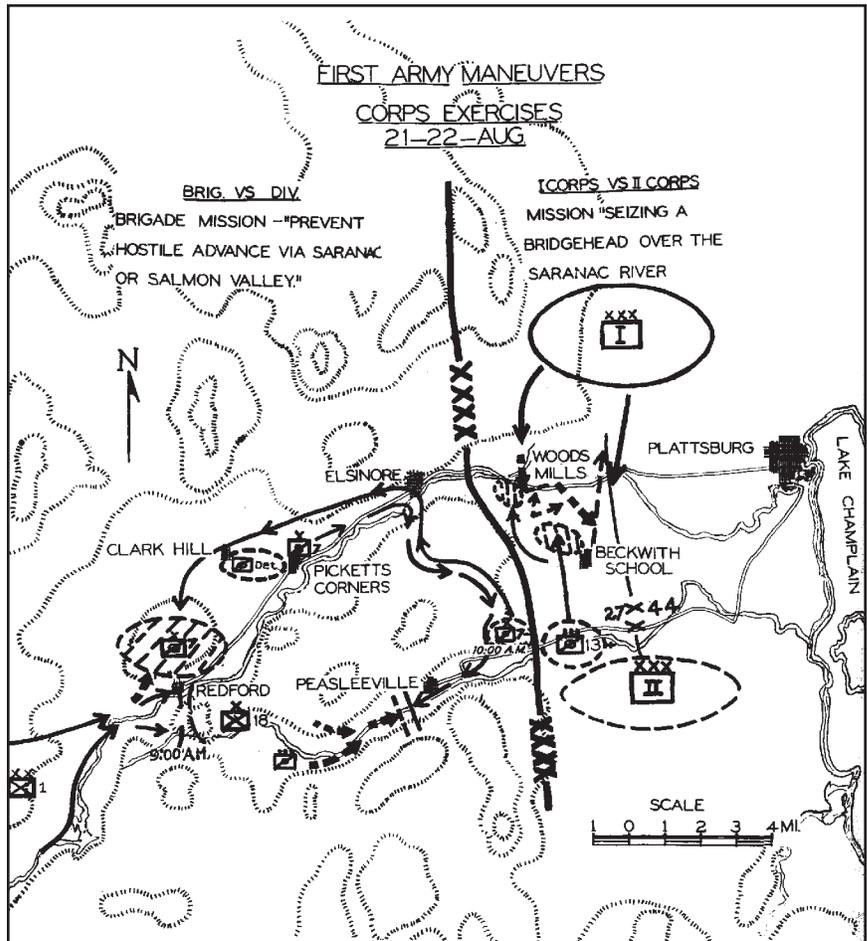
al, 7th Cavalry, by means of staff officers, directed the combat elements to withdraw at once and move without lights to concealed bivouacs in the general area: Clintonville-Arnold Hill-RJ 984-Rogers for reservicing, rest, and feeding in preparation for the following day's operations (see sketch 4). The bivouac area was outposted and liaison with 1st Division maintained.

"Instructions had already been given by messengers for kitchen and fuel trucks to proceed to the bivouac areas when orders were received (as the troops were arriving in the bivouac areas), directing the brigade to move to the west, thence to the north flank (north of the Saranac River), prepared for new operations at daylight on 24 August. This movement called for the assembly of the brigade over difficult mountain trails, a night march of some 60 miles, all without lights, and after some 9 hours of strenuous operations.

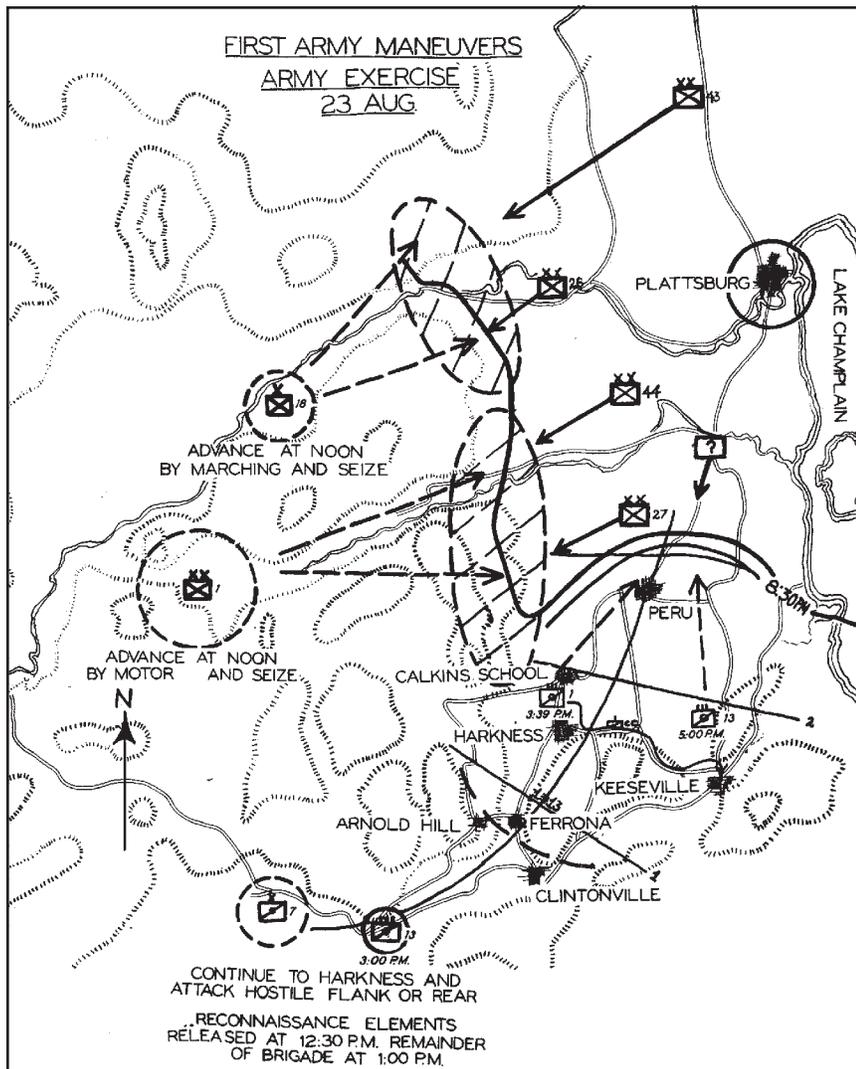
"Previous orders were countermanded and new orders carried by staff officers. Assembly of march serials was completed and the march initiated at 11:15 pm (preceded by reconnaissance), with an amazing lack of confusion and minimum delay (see sketch 4).

"About 2:00 am, 24 August, the brigade was halted in march column between Redford and Silver Lake; kitchen and fuel trucks joined organizations to provide a hot meal and refuel. The march was resumed about 2:45 am over a narrow road along the Saranac, which was rendered hazardous by frequent temporary bridges and fills on a road which flanked the river.

"At Saranac, regimental and similar commanders joined the brigade commander, who issued instructions calling for the following:



Sketch 2



Sketch 3

“The brigade to march via Pickett’s Corners to Dannemora. From there, the brigade, less the 1st Cavalry, reinforced by a battery of artillery and platoon of engineers, to march on Rand Hill; the 1st Cavalry to turn north at Dannemora, move via Ledger Corner on the line West Beekmantown-Beekmantown where it would report arrival and receive orders (a further wide swing of about 30 miles).

“On resumption of the march, there occurred one of those contretemps, which can so easily occur at night with all troops and especially with fast-moving columns. A guide stationed at a crossroads near Pickett’s Corners became confused and directed part of the column on the wrong road. It was some time before the error was discovered and, as a consequence, the planned operation was delayed for more than one hour. Elements of the brigade, which had taken the correct route, reached Dannemora at 5:15 am, but it was after 6:00 am before the remainder of the column arrived.

“The unfortunate delay had two immediate consequences. Information was received about 6:30 am that black troops were crossing the Saranac on two bridges to the west of Elsinore and Cadyville, respectively, and that there was a large truck movement in the same vicinity. (This was the 43d Division, the black army reserve, which was undertaking an envelopment directed against the north flank and rear of the blue position.) The 13th Cavalry moved east from Dannemora in the direction of the hos-

tile river crossing. About 2 miles east of Dannemora, progress was effectively halted by hostile demolitions and antitank dispositions hastily provided after daylight. Earlier, an armored car platoon had been in possession of the defile at CR 1161 (over Canfield Brook), but for some reason, had been withdrawn. As a consequence, the advance of the 13th Cavalry for the next 2 hours was a succession of limited objective flanking actions against antitank dispositions in a continuous defile. Combined trains and service parks were halted at Dannemora whence they operated until late in the afternoon of the 24th.

“By 9:00 am, the 13th Cavalry had succeeded in pushing to Rand Hill, but was held up by a black battalion strongly supported by artillery. The 1st Cavalry was ordered to assist by flanking action from the east, then resume its advance.

“Following the combined attack to complete the occupation of Rand Hill, a terrain feature, which dominated the entire northeast of the Saranac, the 1st Cavalry was directed to seize the high ground about 2 miles northeast of West Plattsburg in order to assist the movement of the 13th Cavalry to the southeast (in a zone immediately east of Sandburn Brook). There was another purpose behind this plan — to clear the area in order to permit the movement of the fuel trucks, which were urgently required for the replenishment of fuel.

“By the middle of the morning, it was apparent that the entire area north of the Saranac was infested with black antitank detachments, ranging from single 75mm guns supported by infantry to entire batteries supported by battalions of infantry. These detachments were installing road blocks and completing assumed demolitions at the frequent defiles. From this time to the end of maneuver, the impression was gained that black efforts were directed more to protection against the mechanized cavalry than to any offensive action. Actually, it is believed that close to 50 percent of the black 75mm artillery was dispersed as antitank guns in its rear areas. By 10:30 am, the blue mechanized cavalry was deep in the black rear area, moving rapidly from north to south across the rear installations.

“By 12:30 pm, 24 August, the main body of the 1st Cavalry had reached the road: Morrisonville-Plattsburg, with reconnaissance elements south of the Saranac (which was readily fordable in a great many places southeast of Morrisonville). About 12:30 pm, the 1st Cavalry surprised a black tank company going into what would have been an excellent ambush. In the ensuing action, the hostile tanks were ruled out. *Undoubtedly, this head-on engagement would have been costly to both groups of vehicles.*

“By this time (shortly after noon the 24th), the mechanized cavalry brigade had been continuously in action since 1:00 pm the preceding day. Only part of the units had had one hasty meal. Necessary refueling and maintenance had been most limited. All ranks, but especially combat vehicle drivers, were fast approaching exhaustion though still filled with admirable enthusiasm and aggressiveness. Accordingly, orders were dispatched

to withdraw all elements of the brigade well to the north to the vicinity of West Chazy for rest, reorganization, and refueling. (Actually it is believed that this move was in conformity with the desires of the maneuver director in order to prevent the complete collapse of the remaining scheduled exercises — the extension of the black envelopment, combined with a night attack, blue night withdrawal, and a daylight attack by black on the 25th. See sketch 4).

“The 7th Cavalry Brigade completed its assembly in the West Chazy area late in the afternoon in a torrential rain; trains joined units, all elements refueled, the area was outposted, much needed rest was gained, and plans were announced for a resumption of the advance early 25 August. The plan of operations for 25 August provided:

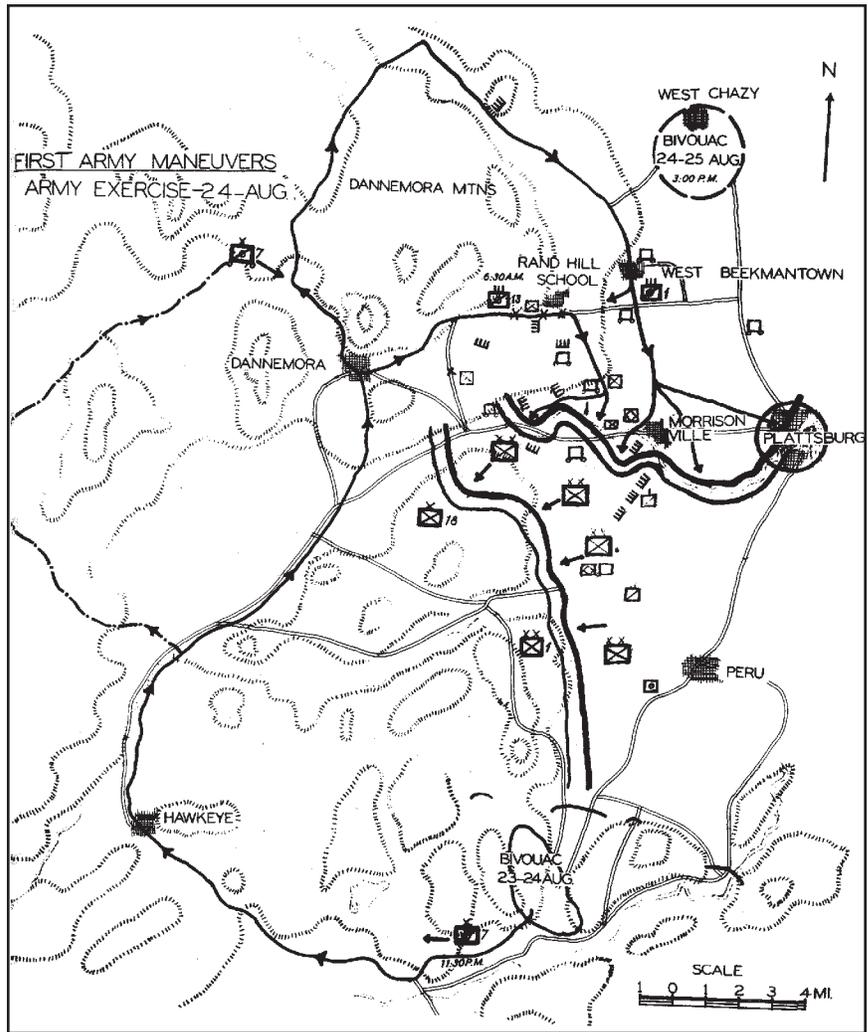
“The brigade to advance to the south, force a crossing of the Saranac, seize the high ground as far as the Salmon River, then turn to the southwest to strike the black left flank and rear (see sketch 5).

“Regiments to advance abreast in more than one column, the 13th Cavalry on the right; advance guards to cross the outpost line at 5:00 am; reconnaissance detachments to move at 2:00 am. One Combat Car Troop, 13th Cavalry, to follow the 1st Cavalry as reserve. Trains to assemble and await orders in bivouac area (vicinity of West Chazy).

“The advance to the south was initiated as planned. By daylight, reconnaissance elements had crossed and were south of the Saranac. North of the Saranac, the main brigade columns encountered frequent antitank 75mm guns and groups of machine guns, which were promptly reduced by flanking maneuver and by artillery fire. By 6:30 am, the 1st Cavalry was crossing the Saranac at the bridge immediately northeast of BM 294 (about 5 miles southwest of Plattsburg). Shortly afterward, the 13th Cavalry encountered serious resistance at the bridge at Morrisonville (consisting of two batteries of 75mm guns and machine guns), which was being reduced when the exercise terminated. Here at Morrisonville, the 1st Cavalry surprised and captured important black army headquarters installations. The 1st Cavalry and reconnaissance elements were moving to the south of the Saranac deep in the black rear. The exercise was terminated shortly after 7:00 am, 25 August.

“Since the 7th Cavalry Brigade assembled promptly and marched immediately across the black rear in returning to the base camp at Black Brook, an opportunity was presented to observe black protective dispositions in its rear areas. In addition to the bridge defense at Morrisonville, there was a large concentration of all arms just north of Beckwith School with 75mm guns disposed for antitank defense. A similar disposition was observed northwest of Schuyler Falls and frequent 75mm guns and infantry detachments observed as far south as Peru. This is mentioned to indicate the psychological effect of the mechanized cavalry, as well as emphasize the dispersed nature of the black antitank defense.

“The following comments on the Army exercise are deemed important:



Sketch 4

“The rapid night march of the 7th Cavalry Brigade, without lights, from the south to the north flank, demonstrated the great strategical mobility and value of the unit.

“Continuously demonstrated was the serious need for a reconnaissance and support echelon for the mechanized cavalry brigade — to consist of reconnaissance elements and a fire support group of machine gun and rifle units. Such a composite unit would provide the necessary brigade reconnaissance elements, protection for trains, and required mobile fire support.

“Night movement of the brigade without lights (except for concealed indirect rear wheel illumination) demonstrated that rates as high as 15 miles per hour on fair roads (except in dust) is feasible.

“While the total lack of suitable antitank weapons exercised a decided influence, yet one lesson stood out, which was the necessity for careful coordination of antitank protection and the maintaining of mobile antitank units. Piecemeal demolitions, road blocks, and dispersal of antitank means is entirely ineffective.

“The rapidity of mechanized cavalry action, the speed with which units energetically lead may disperse against targets of opportunity, was recognized by the brigade commander who guarded against such action by assignment of successive objectives and frequent phase lines from which units reported, then advanced therefrom only on brigade orders.

“Experience in these maneuvers demonstrated the need for a greater number of trained assistants in the operations section of



Cadets at West Point inspect equipment of the 7th Cavalry Brigade.

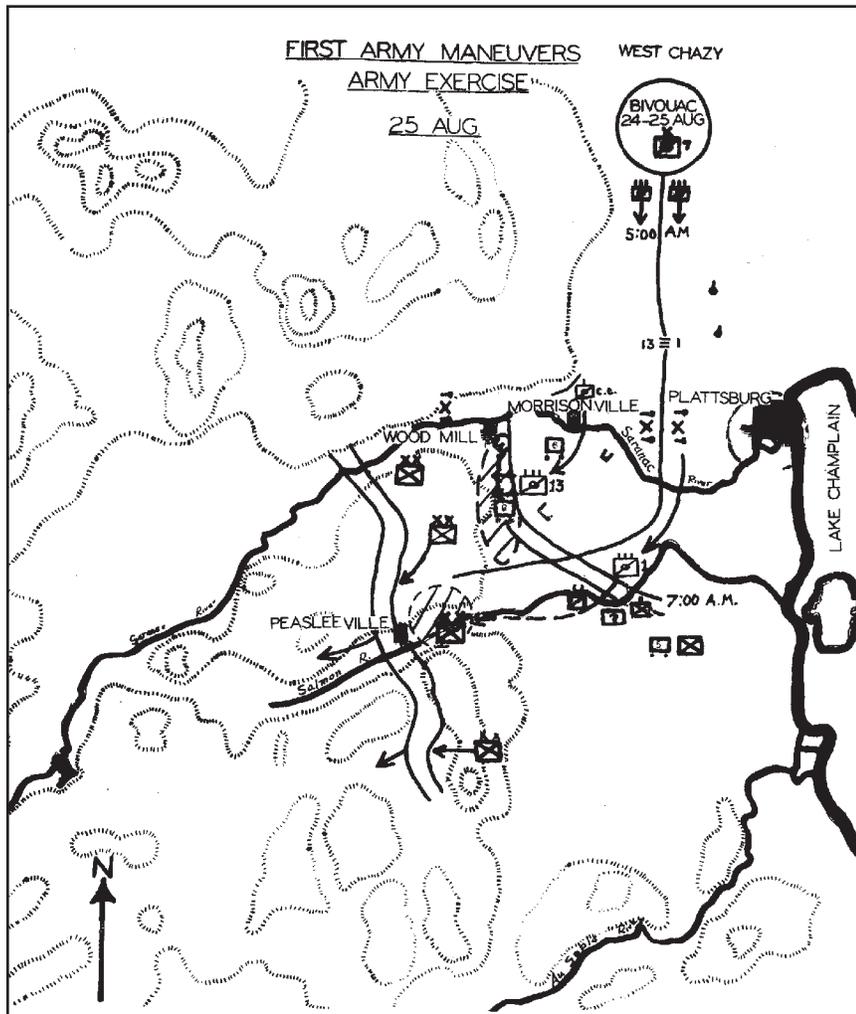
brigade headquarters who may be used as liaison officers. The kaleidoscopic change of the situation in mechanized cavalry operations makes necessary the dispatch of orders, frequently by officer messenger. Also, adequate, timely, and correct appreciation of the existing situation can be gained only through staff officers' conferences with advance commanders and reports of observations.

“While the maximum mobility and effectiveness of mechanized cavalry is only obtained in favorable terrain, the broken terrain of the Plattsburg area demonstrated that terrain must be difficult in the extreme to constitute a complete barrier to mechanized units.

“The umpiring of mechanized cavalry operations is a difficult problem. In this maneuver, umpires were provided down to include the squadron. It is believed necessary that sufficient umpires be provided with mechanized cavalry, to include the troop unit, because of the many isolated actions which develop in reconnaissance and in maneuver against antitank dispositions.

“Similarly, umpire communications with umpire headquarters and contact umpires is a difficult problem in mechanized cavalry operations. Pigeons were used by the senior brigade unit umpire as a means of communication with umpire headquarters.

“In conclusion, it is desired to pay tribute to the high degree of training and leadership demonstrated during the operations of the 7th Cavalry Brigade. The enthusiasm, devotion, and efficiency of all ranks and units displayed throughout an arduous period of one month were an inspiration. The existing mechanized cavalry brigade is an extremely well-trained unit which, in the First Army maneuvers, forcibly demonstrated its effectiveness in mobile exercises — though operations were often in terrain far from favorable to the exploitation of mechanized cavalry capabilities.”



Sketch 5

During the maneuvers, Mayor La Guardia of New York City made a request for the presence of the brigade at the New York World's Fair. This request was approved by the War Department and on 28 August, 3 days after the close of the maneuvers, the brigade, including its track and half-track vehicles, commenced its march of 350 miles to New York City, where it was to camp just outside of the World's Fair. En route, it passed through West Point where it was reviewed and inspected.

The entire column of more than 600 vehicles was received in New York City by the mayor and Lieutenant General Drum. From the George Washington Bridge, it marched down the west side of New York, north up Broadway and Fifth Avenue, and over the Queensboro Bridge.

Leaving the camp at the World's Fair at 1:00 am, 8 September, after again loading its track and half-track vehicles, the brigade reached its home station, Fort Knox, on 13 September.

During the last 36 hours of the march, the brigade travelled 390 miles. This included a short bivouac at Hamilton, Ohio, and 5-hour halt in Jeffersonville to unload its track vehicles and reorganize. The last 40 miles of the journey were made by the brigade with all its vehicles. On arrival at its home station, the brigade, exclusive of maneuver operations, had marched a distance of 2,238 miles in 15 marching days.

CONCLUSIONS

Mechanized cavalry is a highly technical weapon and in order to function efficiently, requires experienced, well-trained personnel in all grades. Due to its high mobility and great radius of operation, its supporting troops must

be familiar with its tactics and technique. This familiarity can be attained only by constant combined training.

Mechanized cavalry is a powerful striking force, capable of operating effectively even over very difficult terrain. It is also capable of making long strategic moves rapidly, under cover of darkness and without lights.

A mechanized cavalry brigade should be employed as a combat team in order to realize the full value from its air service, ground reconnaissance, combat car, machine gun, and artillery elements. It is a mistake to divide the brigade and a greater mistake to divide the regiment, which is the basic combat unit.

Mechanized cavalry should be assigned to those missions of mobile combat, which are most important to the success of the Army. Its successes or failures are capable of affecting the operation of the entire Army.

Mechanized cavalry must be preceded by adequate reconnaissance, both ground and air, in order to locate obstacles, ambushes, and anti-mechanized weapons. Likewise, it must be covered by security detachments to prevent surprise and provide freedom of action when hostile forces are encountered.

Mechanized cavalry must leave roads and move cross country when in range of hostile artillery.

Mechanized cavalry should not be assigned the mission of holding extensive sectors during darkness, particularly in terrain that severely restricts vehicular maneuver. It should be relieved at dusk and withdrawn for the purpose of feeding personnel, and refueling and maintenance of vehicles. Under cover of darkness, it should then be moved to a point from which it can launch an offensive blow at daylight. *The personal, rather than the mechanical, factor controls the limit of endurance.*

Mechanized cavalry gains surprise by: secret marches at night without lights; by using feints and demonstrations while the direction of the main effort is kept concealed; and by rapid movement even though observed. Time and space factors often do not permit the enemy to make or change dispositions in time to counter a mechanized thrust.

Mechanized cavalry, due to its great firepower, rapidity of action, and striking ability, has a decidedly adverse effect on the morale of other ground troops who realize the comparative ineffectiveness of their small-arms fire against rapidly moving armored troops.

Not only infantry regiments and divisions, but the rear areas of corps and armies, must possess adequate means for anti-mechanized defense. In order to provide for defense against the threat of the mechanized brigade in the recent maneuvers, the black army was forced to use its organic artillery. This resulted in the supporting fire of many battalions being lost to the front line units at times when their fire support was sorely needed.

When infantry is equipped with adequate means for anti-mechanized defense, and makes dispositions which would afford protection against mechanized attacks from any direction, such as a cordon defense, it is in danger of losing its mobility and becoming defensive minded. The same may be said of horse cavalry.

Infantry tank units do not possess the auxiliary means of reconnaissance and support to successfully oppose a strong force of mechanized cavalry. Reconnaissance from unarmored vehicles is often of doubtful value and very liable to be most costly in men and vehicles.

The majority of the road blocks encountered during the maneuvers were not sufficiently extensive or defended strongly



Combat car in action during maneuvers.

enough to be more than temporarily effective. The bulk of the mobile anti-mechanized units should be held centrally located and in readiness for quick dispatch and employment in previously reconnoitered positions upon receipt of timely information from air and ground reconnaissance. *The best defense against a powerful mechanized cavalry is a similar mechanized unit.*

Both horse cavalry and motorized infantry are ideally suited to support mechanized cavalry and operate in conjunction with it. Horse cavalry is capable of operating more rapidly when the distance is short; motorized infantry when the distance involved is long.

Prior to September 1939, the question as to what role mechanization was destined to play in large-scale modern warfare was largely an academic one. This question, however, was answered most conclusively on the battlefields of Poland within a few days after the close of the First Army maneuvers, when the German army, using its mechanized divisions so successfully and decisively, conquered a valiant army of a million men in the amazingly short period of 2 weeks. The lessons brought out by the first Army maneuvers and other such maneuvers have been confirmed by war.



Lieutenant General Drum addresses the officers and men of the 7th Cavalry Brigade.



The First U.S. Tank

by Colonel (Retired)

(Reprinted from the July-August

In direct contrast to the lightning-like thrusts of U.S. armored divisions across France and Germany during the last year of World War II (WWII), the first U.S. tank action was a slow, difficult retrograde movement on the opposite side of the world in the Philippines.

In July 1940, there was only one Reserve tank battalion, the 70th General Headquarters (GHQ) Reserve Tank Battalion (Medium) stationed at Fort George G. Meade, Maryland. It was sadly lacking in personnel.

When news came to Major General Adna R. Chaffee that the War Department planned to use many similar units as special task forces, although they had made no provision for their organization, the "father of the armored force" could foresee that without authorization for these

Reserve units, his armored divisions would be chopped to pieces to supply them and he dispatched a letter of protest to Chief of Staff Marshall. "So, already they are contemplating breaking up our divisions to fritter them away for small purposes," he wrote indignantly. "G3 has set up no additional GHQ Reserve tank battalions so far. At least four more should be set up at once. We will have materiel."¹

In October 1940, General Chaffee wrote to Major General William Bryden, deputy chief of staff, repeating his plea for "prompt formation of efficient GHQ Reserve tank battalions."² It was his proposal to use 18 scattered National Guard tank companies to provide personnel for the immediate formation of 4 tank battalions, with training of cadres for 10 more battalions to begin soon.

General Chaffee's work resulted in the first of these additional battalions being formed about 1 month later when, on 25 November 1940, the 192d GHQ Tank Battalion was inducted into federal service at Fort Knox, Kentucky. Three more battalions were soon organized: the 193d at Fort Benning, Georgia, on 6 January 1941; the 194th at Fort Lewis, Washington, on 22 January 1941; and the 191st at Fort Meade, Maryland, on 3 February 1941.

Inasmuch as these battalions were only expected to be in federal service for 1 year, no attempt was made to standardize them or make them conform with any established table of organization or equipment.³ Two of these units, the 192d GHQ Tank Battalion (Light) and the 194th GHQ Tank Battalion (Light), along with the 17th Ordnance Company (Armored), would soon become the Provisional Tank



Action in World War II

Thomas Dooley

1983 issue of *ARMOR*)

Group, U.S. Army Forces in the Far East (USAFFE).

After the formation of USAFFE in August 1941, General Douglas MacArthur, then commanding, had asked for an armored division. However, the Provisional Tank Group was to be the only armor in USAFFE and its nucleus was never augmented, although a medium GHQ tank battalion had been completely equipped and was on 48-hour standby for departure for the Philippines when its orders were cancelled on 10 December 1941. Furthermore, the tank group would have little time for training before embarking for the Philippines. The 192d GHQ Tank Battalion from General Sylvester's 1st Tank Group at Fort Benning, Georgia, had carried out a defensive role in the 1941 Louisiana maneuvers. The 194th GHQ Tank Battalion had come from

the west coast where it had been taking part in minor maneuvers with, what was at that time, Fourth Army. Both battalions had worked during this maneuver period with early models of the M1 light tank.

The first of the units to arrive in the Far East, the 194th Tank Battalion and 17th Ordnance Company (Armored), reached Manila on 26 September 1941. One tank company of this battalion and a part of the battalion headquarters company had been detached to Alaska. Upon movement to port of embarkation, this battalion (as was the 192d later) was reequipped with new M3 light tanks and halftracks. The armament of these new tanks was strange to the personnel. The M3 had, for its main battery, the 37mm gun with a .30-caliber machine gun coaxially mounted in the turret. The two fixed sponson

guns (fired by remote control by the driver) and the anti-aircraft machine gun were all new to the crews. This light tank was heavier and longer, had better flotation, and was equipped with radio facilities that were different from those of the M1. So little time and direction had been possible before departure that the unit thought it necessary to install the new radios, remove the right sponson gun to make space, and spot-weld armor over the gun port.

The 194th was assigned to Fort Stotsenberg, which was adjacent to Clark Field, in Pampanga Province. Before the group commander arrived, this unit undertook limited reconnaissance in North Luzon. It did not accomplish any firing problems or cross-country driving as no ranges, fuel, or ammunition were released for these purposes.

The group commander, Brigadier General (then Colonel) James R.N. Weaver, along with Headquarters and Group Headquarters Detachment and the 192d GHQ Tank Battalion (Light), arrived in Manila on 20 November 1941. The headquarters detachment consisted of 10 enlisted men, no tanks, two halftracks, two 2-way radios, two quarter-ton command and reconnaissance (C&R) cars, one sedan, and no trucks.⁴ These units were also stationed at Fort Stotsenberg and were housed in tents pending completion of semi-permanent housing to be built of *sawali*, a siding for houses and buildings made by the natives who wove 2-inch reeds onto a bamboo frame. The only training at this time was limited reconnaissance work as far north as Lingayen and Baguio, the Philippine summer capital.

The Provisional Tank Group, USAFFE, was organized on 21 November 1941. Eight days later, on 29 November, the 17th Ordnance Company (Armored) was assigned to the group at Fort Stotsenberg.

On 27 November, a general alert had been sounded for all forces in the Philippines, but for some reason or through the oversight of someone, the tank units were not included in the warnings. However, the commanding officer of Clark Field had been ordered by Far East Air Force (FEAF) to execute two alerts — one by day, one by night — before 2 December. The tank group had been asked to participate and on 1 December, moved into battle positions for the defense of Clark Field.

The general change in commands, which became effective about 22 November, may have contributed to the disrupted communications channels: FEAF, North Luzon Force, South Luzon Force, and the Philippine Division, all had new commanders. On 28 November, when General Jonathan Wainwright arrived at Fort Stotsenberg to take command of North Luzon Force, his staff consisted of a chief of staff, two officers in the G3 section, and one officer in the G2 section.

In the chain of command, the Provisional Tank Group was a separate tactical command under the commanding general, USAFFE, and was associated with the General Reserve only for administrative reports. The major unit of this reserve was the Philippine Division.

Clark Field Attacked!

On 8 December (7 December in the U.S.), when the news of the Pearl Harbor attack was received, the crews were at their tanks, and at 0830 hours, the word

was passed that Japanese planes were 40 minutes away. Final checks were made as the men stood by, but no attack came. However, at 1230 hours, while the noon meal was being served, a surprise attack was made on Clark Field. Bombers at about 20,000 feet accurately blasted Air Force installations throughout the Stotsenberg area. The tank weapons were of no use until the strafers came in low immediately after the bombing. In this action, Technical Sergeant Temon “Bud” Bardowski, B Company, 192d Tank Battalion, is credited with the first enemy plane brought down by a U.S. armored unit in WWII. (The first armored soldier to die during combat in WWII was Private Robert H. Brooks of Company D, 192d Tank Battalion. (*Brooks Field, the main parade ground at Fort Knox, Kentucky, is named in his honor. Ed*) After the attack, the tanks were redeployed, with the 194th moving about 3 kilometers northeast and the 192d spreading out to more fully protect the relatively unbroken terrain to the south of the airfield.

There were two more air attacks, on 10 and 13 December, but the group losses amounted to only one halftrack destroyed and two men wounded. During this time, tankers brought in the first prisoners of war, who were apparently Japanese naval aviators.

With landings imminent in Southern Luzon, the group headquarters moved to Manila and the 194th moved to an area north of Manila after having sent reconnaissance and liaison groups to the areas of Muntinlupa, Nasugbu Bay, Balayan Bay, Battaangas Bay, and east and north around Lake Taal. After the tank group commander arrived, General Wainwright entered Rosario. Movement of any kind was hampered due to unopposed enemy air activity — after the airstrikes on 8 December, FEAF in Luzon consisted of only a few P-40s, useful only for sneak reconnaissance missions, and a few Philippine army BT-1s, which were good only for courier service. The general situation was not clear, but reports indicated that two companies of the 11th Philippine Army Division were engaged north of Damortis. Elements of the 26th Cavalry were en route from Rosario to the point of contact but, as witnessed by the writer, the horse troops were at the mercy of enemy fighter-bombers.

An enemy motorized unit was reported approaching Damortis and General Wainwright asked the tank commander, “What can you do?” Resupply gas had not yet arrived, but the company fuel resources

were pooled and a single tank platoon was gassed up and sent to contact the enemy reportedly moving on Damortis. This platoon was commanded by Lieutenant Morin.

First Tank-versus-Tank Action

The platoon did not encounter opposition as they moved north out of Damortis and continued on to Agoo, where they met an enemy tank unit on the road and the first U.S. tank-versus-tank action of WWII occurred. The enemy tanks were of low silhouette, had no turrets, and sloped sides so that penetration was difficult to achieve. On the other hand, their 47mm gun was quite effective against our tanks with their perpendicular sides and high profile — points that had caused their rejection by our allies before the war. Lieutenant Morin’s tank, which had left the road in an attempt to maneuver, was hit and caught fire, which was the first U.S. tank lost in tank-versus-tank action in WWII. It was later determined that the crew survived and was captured, making them the first armored force POWs in WWII. The other four tanks were all hit, but were able to pull out, one under tow. However, they were all lost later in the day to bombings and mechanical mishaps. The assistant driver of the platoon sergeant’s tank, Private Henry Deckert, B Company, 192d Tank Battalion, was the first armored soldier killed in tank-versus-tank action when a direct hit penetrated the forward deck. Hits on enemy tanks with our 37mm guns had been observed during the fight, but many of the shots were seen to ricochet off the sloping armor.

Later, the situation around Damortis decayed to such a degree that it was imperative that tanks be used to cover the withdrawal of the 26th Cavalry. The company at Rosario (gas had finally arrived by truck) was sent in with instructions to cover the withdrawal with a series of leapfrog actions. Later that day, the tanks were deployed to the north and west of Rosario, but the rapidly developing situation caused the commanding general of the 71st Philippine Army Division to order all elements south of the Bued River Bridge, which was burned in the face of advancing Japanese tanks and cyclists. (*See “26th Cavalry in the Philippines,” ARMOR, January-February 1983. Ed.*)

The 192d, at this time, was deployed to the east of Highway 3, and on 24 December, because of the dire straits of the North Luzon Force, the 194th Battalion (less Company C) was sent from the south of Manila to the west flank of the arterial highway.



About this time, a British ship, which had been unable to reach Singapore, pulled in to Manila, and from its holds came potential augmentation for the tank group. Some 40 Bren gun carriers were made available and the initial plan called for organization of two companies. Bren machine guns were not available, but ordnance was to arm the carriers with either .50-caliber or .30-caliber Browning machine guns. Had this organization been completed, the tanks would have been strengthened by a much needed economy of force, capable of carrying out both reconnaissance and security roles. Due to notice of the impending enemy landings in the Lingayen Gulf area, and subsequent movement of the tanks, the augmentation was halted. Eventually, all carriers were armed (those operating with tank units) with salvaged guns from tank casualties. About 20 of the carriers were kept with the tank group and the remainder was sent to the Philippine Army divisions and the 26th Cavalry. The latter group of Bren carriers, commanded by a veterinary officer, did noble work throughout the Bataan campaign. Those carriers that were retained by the tank units did good work in emergency supply runs and on cross-country reconnaissance patrols over doubtful terrain before committing tanks to action. It was soon found that the heat-baked ground that gave the appearance of good driving conditions was only a crust that would not support the 4-ton Bren carriers.

Tankers Move to Lingayen Gulf

At a staff conference at USAFFE headquarters on the evening of 21 December, orders were received to dispatch one company from the 192d by midnight

and, by resupplying with gas at Gerona and at Bauang, get to the Lingayen Gulf area by daylight, where, according to reports, it was anticipated the enemy would land a sizable force at first light. The 192d was ordered to move up Highway 3 for such supporting moves as the battalion commander might direct after his contact with the commanding general, North Luzon Force (General Wainwright).

When the group commander arrived in the Lingayen Gulf area, he found the company, which had been dispatched before midnight, stranded at Rosario, out of gas. The tank company commander reported that contradictory orders had prevented his refueling at Gerona and that his mission had been changed to that of providing cover for the rear elements of the 11th Philippine Army Division. This instance of changed orders was to be the case on several occasions in the next few weeks due to the confusion and lack of coordination between units of untrained troops and staffs.

It is only fair to explain that all Philippine Army divisions were comparatively untrained and understrength. Many of the troops had gone through 5 months of Philippine military training, but some had not even had this background. Also, some of the units that were now moving to contact with well-trained Japanese divisions, had not been mobilized until after the declaration of war.

No steel helmets or individual entrenching tools were available to Philippine Army troops. The uniforms habitually worn by these units were light tropical hats, fatigue clothes, and canvas-topped shoes. All men were equipped with bolt-action

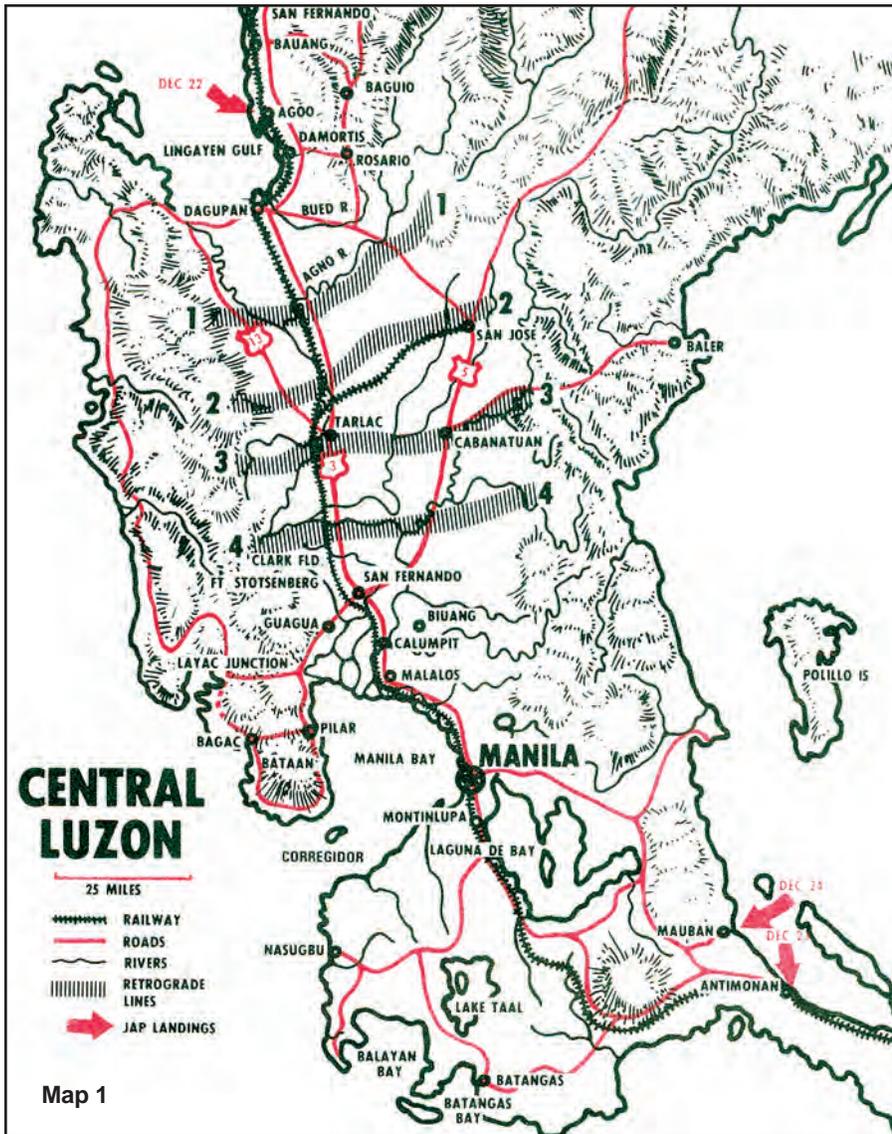
Enfield rifles, but very few spare parts were available. This point was of concern to unit commanders due to the many malfunctions caused by broken ejectors.⁵

Since the Orange Plan (the pre-WWII operational plan covering the Philippines) was in effect, the mission assigned to the Provisional Tank Group was to cover the withdrawal of Filipino-American forces into the Bataan peninsula. There, the troops were to make a stand and await reinforcements from the United States; but, the Philippines had already been written off and the reinforcements never came.

Tankers Prevent a Rout

The withdrawal plan called for a retrograde movement to delaying positions on four successive phase lines (see Map 1, Lingayen Gulf to Clark Field). The tanks carried out this mission amid much confusion. Because of the tropical nature of the terrain, all units were instructed to plan each delay position to occupy all north-south roads and, at the same time, they were to reconnoiter for exit routes that would tie in with Highways 3 and 5 (the two north-south axial roads). Tanks occupying positions on the main routes were ordered to pay particular attention to enemy mechanized units, and were given detailed instructions on how to cover turns in the highway and coordinate their efforts with the self-propelled 75mm guns mounted on halftracks.

A number of tank actions now took place, one of the most notable of which was the action at Baliuag, Pampanga, where two platoons of C Company, 192d Tank Battalion, in a back-and-forth fight through the town, bagged eight Japanese



medium tanks and prevented a complete rout of American and Filipino troops in the area.

Another, more tragic, incident occurred north of the Agno River when, due to lack of coordination between units, 10 tanks had to be abandoned due to blown bridges and a hard-pressing enemy.

The first phase of the final action before the withdrawal into the Bataan peninsula came in covering the Calumpit Bridge position. At this junction, the last troops of the South Luzon Force joined the route of the North Luzon Force. The Calumpit Bridge was blown during the night of 31 December-1 January. After the destruction of the bridge, the 192d was passed through the 194th, now reduced to about 30 tanks. Because of this reduction, Company A of the 192d was attached to the 194th and this force was to cover the retirement from the Calumpit Junction to the Layac Junction position.

The attached company, in one instance, attempted a makeshift counterattack in the vicinity of Guagua with elements of the 11th Philippine Army Division. The infantry elements mistook our tanks for the enemy and laid down very accurate mortar fire. They repeated this tactic on the group commander's jeep as he attempted to establish some sort of coordination. The tank company, by trail and cross-country travel and with the eventual loss of three tanks, rejoined the 194th on Highway 7 at a point west of Guagua.

On the afternoon of 5 January, C Company of the 194th, supported by four self-propelled 75mm guns, ambushed an enemy unit of about 700 or 800 infantry, and caused losses of about 50 percent. This group worked continuously during the withdrawal at retrieving tank gas cached along the route.

One other firefight marked the covering action just before entry into Bataan. This

engagement, with few casualties, lasted from 1430 hours to about 1700 hours when the enemy withdrew. It is of particular interest only because it marked the first use of smoke by Japanese units.

The period from 6 to 26 January was marked by further covering actions on the east coast road and one attempted foray in the west (I Corps sector.) The covering action on the east was to aid II Corps in pulling back after a main effort was made by the Japanese in the Abucay Hacienda area.

The new and last main line of resistance (MLR) was along the Pilar-Bagac Road. The action in the I Corps sector was an attempt to open up a road to extricate the 1st Philippine Army Division, which had been cut off north of Bagac by a sizable infiltration of Japanese units. During this attempt, the lack of close-in infantry protection and the cleverly concealed Japanese road mines caused the loss of two tanks and the eventual withdrawal of the foot troops, without their heavy equipment, over a circuitous beach trail.

Also, during this period, the bulk of the tank units gained their first respite since 8 December in a bivouac area south of Pilar. The tank units were reorganized, companies of the 194th being reduced from 17 to 10 tanks; platoons from five tanks to three. This same reduction was shortly to be imposed on the 192d. Tank overhaul and maintenance was done by the 17th Ordnance Company (Armored) that carried out third- and fourth-echelon maintenance by using ordnance stocks on South Bataan that had not been released before 8 December. For the first time since hostilities began, crews were fed from their own kitchens, but this luxury was dampened due to the forced reduction in supplies on 6 January, which placed all troops on half rations.

Tanks Not Used Properly

During this period, the lack of knowledge among the infantry commanders of the characteristics, capabilities, and limitations of tanks was noted when requests were made for tanks to seek out and destroy snipers, flush Japanese troops from sugarcane fields, and make sorties in front of the MLR into areas that had been extensively mined by our own troops.

The beach defense of the east coast was assumed on 28 January, and with it came contingency missions for the tank units: the 192d overwatched the north half of the east coast and was on call to support the western half of the II Corps front; the 194th was assigned the southern half of the beaches and was to provide secondary support to the western half of II Corps.

The difficulty in supporting any frontline unit was accentuated by the narrowness of new trails. The old trails leading off the coast road were dead-end avenues, originally having been cut for timber operations.

On 1 February, composite platoons of tanks and halftracks were assigned to each of three airfields, which had been built on the peninsula in anticipation of the reconstitution of local air force units that were to assist the beleaguered troops.

Upon the request of the I Corps commander, the 192d (less one company) was dispatched to the western sector to support foot troops in erasing three enemy pockets: the Tuol pocket, formed by the infiltration of Japanese units on the I Corps front before the MLR had been cleared and definitely established; and the Aglalom and Anyasen pockets, formed through the uncoordinated Japanese landings in their attempt to cut the main supply route (the west coast road).

The difficulties typical of these actions can best be described by quoting from the citation awarded Lieutenant John Hay of the 192d:

“During this period and in the terrain involved, a rugged, dense jungle wherein tank movement had to be limited to the space cumulatively cleared by repeated charges of a few yards each, Lieutenant Hay’s gallantry, persistence, and complete disregard of personal danger, in an entirely new phase of tank warfare, preeminently contributed to the ultimate success of the tanks and troops which they supported.”⁶

During the Tuol pocket action, the tank-infantry combination worked very effectively against the Japanese dug in around banyan trees, and Lieutenant Bianchi of the infantry company was awarded the Congressional Medal of Honor. Also in this action, one U.S. tank was lost when its crew was blinded by a Japanese flame-thrower (the first used in the campaign) and the tank became wedged between two trees, which necessitated abandonment.

After the clearance of the pockets in the I Corps sector, the tank group instituted a plan for a comprehensive instruction in tank-infantry tactics among Philippine Army troops, but this was limited due to gas rationing and lack of personnel. Although movement was at a minimum due to lack of gasoline, ammunition was adequate and ordnance personnel contributed to the effectiveness of the tanks by converting considerable armor-piercing (AP) 37mm to high-explosive (HE) and canister shells, which were much more useful in the absence of enemy armor.

After the entry into Bataan, enemy tanks were never observed in strength — never more than three at one time, usually less — except in April during the last days of Bataan when U.S. artillery and antitank weapons had been virtually reduced to inaction.

On 3 April, the Japanese started their all-out offensive and as enemy activity increased on the II Corps front, the 194th took on its contingency mission as its primary mission and moved its companies to support the frontline units to the west of the east coast road. The 194th was later supported by one company of the 192d. The activities of the tank units over the next 5 days, with the resultant confusion of untrained, half-fed, malaria-ridden troops attacked by a superiorly equipped, better-trained, better-organized enemy, can hardly be given in detail. Suffice it to say that the tank units supported the infantry at every opportunity and on every trail that was not completely blocked by supply vehicles of the retreating troops. At about 1830 hours on 8 April 1942, the tank battalion commanders were given the following order: “You will make plans, to be communicated to company commanders only, and be prepared to destroy within 1 hour after receipt by radio, or other means, of the word “CRASH,” all tanks and combat vehicles, arms, ammunition, gas, and radios: reserving sufficient trucks to close to rear echelons as soon as accomplished.”⁷

Decision to Surrender Is Made

At about 2230 hours on 8 April, Major General E.P. King, commanding Luzon Forces, announced that further resistance would result in the massacre of the 6,000 sick and wounded in the area and the 40,000 civilian refugees now congested closely about; that he was not in touch with any troops that were still resisting behind the closely drawn lines; that there were less than 25 percent effective of those in being; that, at most, he could not expect to hold more than one more day; and that upon his, and his only, responsibility, he would send a staff officer with a flag of surrender across the lines the next morning. When asked by the tank group commander if any help was in prospect, General King could answer only, “No.” The destruction of the main ordnance dump was to commence at 2340 hours. Troops were to destroy all arms and ammunition and cease resistance at 0700 hours, 9 April 1942.

After the surrender, the tank group commander and his staff were quizzed several times by the Japanese and from these investigations it was learned that the Japanese had feared most the artillery and the

tanks; tanks, by their cordon coastal guard, had caused the Japanese to cancel an invasion from Manila Bay; and the Japanese had overestimated our tank strength by from 33 to 900 percent (158 to 1,080).

The Japanese had about 200 tanks, inferior to ours in armor, but better adapted to tropical terrain and better armed with a very effective 47mm gun. (Report and recommendations on armored equipment was radioed to the War Department, by direction, sometime after the withdrawal to Bataan.)

These were the actions and circumstances that brought the members of the Provisional Tank Group, USAFFE, to that state, which is so ably described by Mr. Winston Churchill as:

“Prisoner of War! It is a melancholy state. You are in the power of your enemy. You owe your life to his humanity, your daily bread to his compassion. You must obey his orders, await his pleasure, possess your souls in patience. The days are very long. Hours crawl by like paralytic centipedes.

“Moreover, the whole atmosphere of prison, even the most easy and best regulated prison, is odious. Companions quarrel about trifles, and get the least possible pleasure from each other’s society. You feel a constant humility in being fenced in by railings and wire, watched by armed men, and webbed about with a tangle of regulations and restrictions.”⁸



Footnotes

¹Mildred Hanson Gillie, *Forging the Thunderbolt*, Military Service Publishing Company, Harrisburg, PA, 1947, p. 195.

²Ibid.

³Ibid., pp. 194-196.

⁴Operations of the Provisional Tank Group, United States Army Forces in Far East, 1941-1942. This report was compiled from memory, notes, and information available from survivors contacted. Such records and files in Group Headquarters, which were not destroyed officially on 9 April 1942, prior to the surrender, were in the possession of the Group S1 and adjutant, Major Robert C. Pettit Jr., 0-300166, ADC (died at sea as a POW, circa 24 January 1945). The original version of this report is at the Alabama Center for Military History.

⁵Report of Operations of North Luzon Force and I Philippine Corps in the Defense of North Luzon and Bataan from 8 December 1941, 9 April 1942.

⁶Operations of the Provisional Tank Group, United States Army Forces in Far East, 1941-1942.

⁷Ibid.

⁸Winston Churchill, “A Roving Commission,” *The Reader’s Digest*, July 1940.

COLONEL THOMAS DOOLEY, U.S. Army (Retired), was commissioned from Texas A&M in 1935. Prior to World War II, he served with the 1st Cavalry Division. During the Philippine campaign, he was aide de camp to General Jonathan Wainwright and was a POW from 1942 to 1945. He attended the Armor Officer Advance Course in 1948 and later was Chief of Staff, U.S. Army Armor Center, Fort Knox, KY, until his retirement in March 1969.



Breakthrough to Bastogne

by A. Harding Ganz

(Reprinted from the November-December 1981 *ARMOR*)

Into the Ardennes

Bigonville was rough. With intelligence of advancing German armor, Reserve Command [Combat Command R] (CCR) had been committed on the right flank, as the other two combat commands of the American 4th Armored Division continued to slug north toward Bastogne and the beleaguered paratroopers of the 101st Airborne Division. Colonel Wendell Blanchard, commander of CCR, had the 37th Tank Battalion (37 Tank), 53d Armored Infantry Battalion (53 AIB), and 94th Armored Field Artillery Battalion (94 AFA), when the command jumped off on 23 December 1944. The reconnaissance platoon of the 37 Tank preceded the advanced guard — Team B (B/37 Tank and B/53 AIB) — as far as the 25th Cavalry's outpost, where Lieutenant Marion Harris pulled the platoon aside and waved the column on.

The approach march to contact along the sheer, ice-covered secondary road was difficult, and tanks and halftracks skidded out of control. Initially, Team B re-

ceived no fire, nor observed any enemy, save an awesome pair of very large enemy tank tracks looming before it in the new-fallen snow.

But as the team approached Flatzbourhof — the Bigonville-Holts railroad station — it began to receive tank, antitank, and machine gun fire from the railroad building and adjacent woods. Captain Jimmie Leach, commander of B/37 Tank and of Team B, deployed his force along the railroad embankment, while the artillery pounded the nearby woods and German positions beyond the railroad station.

As expected, the Germans were quick to counterattack with white-clad paratroopers, reinforced by two self-propelled guns and a captured M4 Sherman tank. Just as quickly, B/37 tanks, firing from their positions behind the railroad embankment, dispatched all three German vehicles, halting the counterattack. During the fight, it was Sherman against Sherman, with Captain Leach's gunner, Corporal John Yarechuk, coming out a winner.

As darkness fell, Team B was ordered to hold its position while Lieutenant Colonel Creighton W. Abrams Jr., commanding the 37 Tank, attempted to maintain the momentum of his attack by sending the tanks of A Company through Team B and those of C Company around its right flank. However, stubborn resistance by tank-reinforced troopers of the German 13th Parachute Regiment, mines and casualties brought the attack to a standstill a full mile away from Bigonville, the CCR objective. The A/37 Tank's passage of B/37 Tank's lines was aborted due to numerous vehicles lost to snow-covered mines, including Lieutenant John Whitehill's command tank; and the C/37 Tank attack was likewise aborted because of the loss of nine tank commanders, including the commanding officer, Captain Charlie Trover, who was killed.

During the cold, clear night with outposts alert, the CCR tankers, redlegs (artillerymen), and doughs (infantrymen) received some badly needed replacements. They repaired their vehicles and reorga-

nized their troops and crews for the next morning's attack.

On the 24th, Team B's tanks and doughs attacked again, fighting their way into the very center of Bigonville, where the tough troopers of the German 5th Parachute Division had to be blasted out house by house. Small-arms and Panzerfaust fire continued to take its toll. Lieutenant Bob Cook, B/36 Tank's executive officer and 3d platoon leader, went down with a rifle bullet in his chest. He was briefly captured by the Germans while he was attempting to find the accompanying medic jeep, but abandoned as the B Company doughs advanced. Captain Leach, who won a Distinguished Service Cross in this fight, was shot in the shoulder and head, but was able to maintain command of Team B.

As the Bigonville battle continued, Colonel Abrams ordered a blocking and screening position, without its infantry, to the north of town. No sooner had its tanks moved into position, than a flight of four American P-47 "Thunderbolt" fighter-bombers, thinking them enemy, made two bombing and strafing attacks on these friendly forces. Captain Leach and

his tank crews tossed out red smoke grenades and frantically attempted to uncover the red recognition panels for identification, while the battalion S3, Captain Bill Dwight, radioed Colonel Abrams to call off the "friendlies." There were no casualties; luckily, the U.S. fliers had missed everyone and everything.

When the mopping up was over, Bigonville, and the surrounding area, yielded some 400 prisoners of war (POW) and 100 enemy dead to the tenacious CCR attackers.

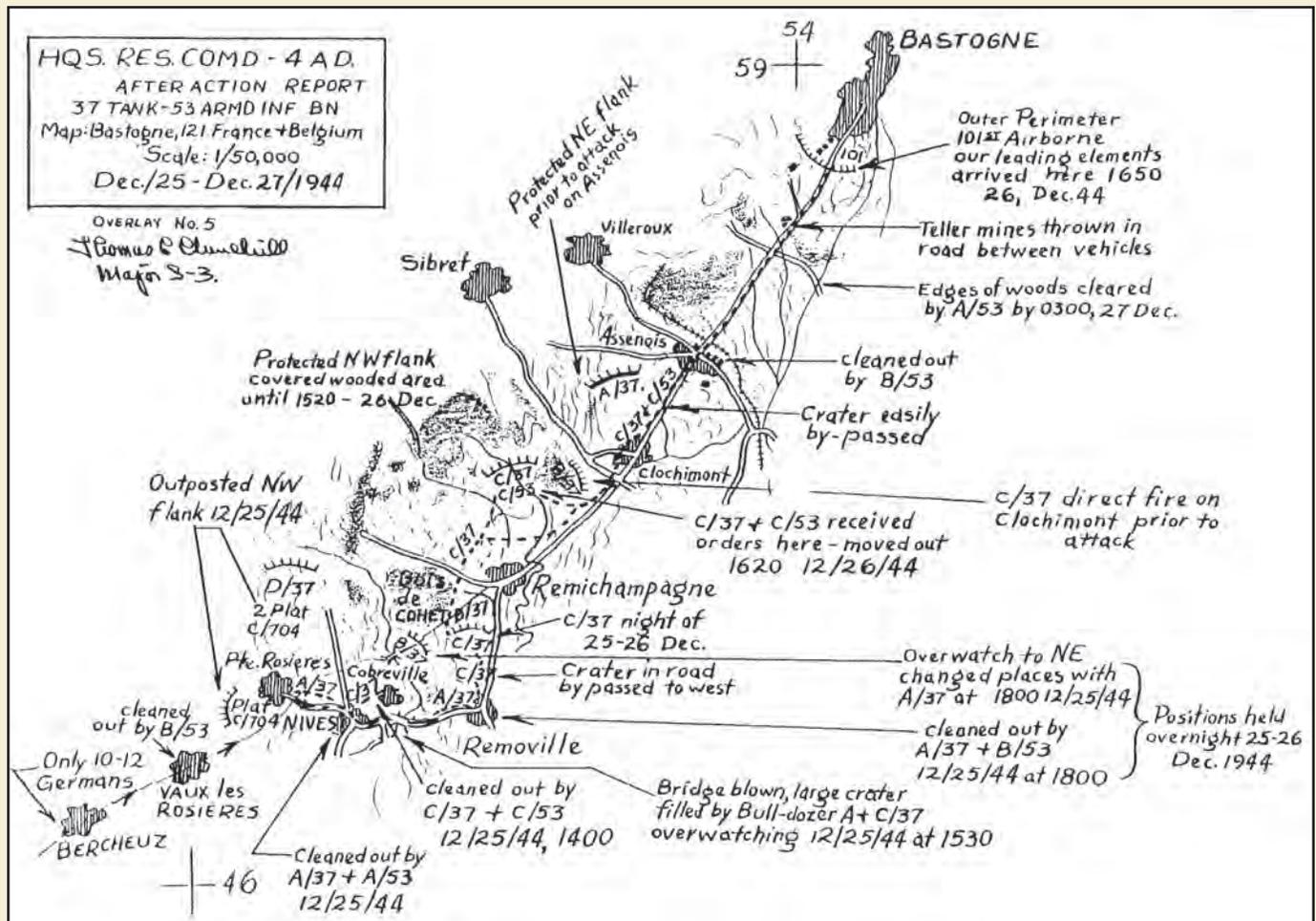
With Bigonville secured, CCR looked forward to spending a restful Christmas Day, feasting on a turkey dinner. The battalions were much understrength, and the 37 Tank in particular had just completed a 160-mile road march up from Lorraine and the Saarland, where it had been supporting the newly arrived 87th "Golden Acorn" Infantry Division in the West-wall fighting.

Bastogne "Fire Call"

When alerted for the "fire call" run to the Ardennes, the 4th Armored Division had just been pulled out of line in Lor-

raine after a month of slugging from the Seille Valley to the German border. Mud and mines had restricted the tanks, overcast had grounded the tactical air support, and the revitalized German defense had skillfully parried every thrust — all of which combined to deny Patton a breakthrough. Having achieved a brilliant reputation as it slashed across France after the Normandy breakout, the 4th Armored was bitter about the casualties it had suffered in the November offensive. Knocked-out tanks were strewn along the way in what was considered an atrocious misuse of armor, and after a shouting match with his corps commander, Major General John S. Wood, the 4th Armored's beloved commanding general, was relieved by Lieutenant General George S. Patton Jr., the 3d Army commander.

But Patton gave the 4th his own chief of staff, Major General Hugh Gaffey, who had commanded the 2d Armored in Sicily. "Gimlet-eyed Gaffey," the laconic Texan with immaculate riding breeches and "boots you could use as a mirror," had a style completely unlike the bluff, good natured "P" Wood. But he was coolly efficient and the 4th was an experienced war machine. Said Patton, "There has never





been such a superb fighting organization as the 4th Armored Division.”

On 22 December 1944, the 4th Armored, under Milliken’s new III Corps in Belgium, jumped off to drive on Bastogne where the 101st “Screaming Eagles” Airborne Division was surrounded by the German offensive of the Battle of the Bulge.

The counterattack cut into the still expanding torrent of the German offensive and resistance stiffened north of the Sure River. Patton, who had promised to reach Bastogne “by Christmas,” found his advance stalling. On the 24th, Milliken decided to regroup his forces to concentrate more power for the relief of Bastogne. Two battalions of the 80th “Blue Ridge” Infantry Division were trucked over to reinforce the armor, and the boundary of the 26th “Yankee” Division was extended to include the Bigonville area, thereby releasing CCR to the 4th Armored Division.

By doctrine and practice, CCR was not employed tactically. Its table of organization and equipment (T/O&E) headquarters was much smaller than those of Combat Commands A and B (CCA and CCB) and was only intended to administratively control units not in the line. But Gaffey tactically employed the reserve to meet the threat to the right flank at Bigonville and he now intended to shift it around to the left to seek a weak spot in the German front.

Night Road March

CCR had just turned in on Christmas Eve when it received orders for a 27-mile night road march from Bigonville around to Neufchateau highway, leading to Bastogne. Attended by appropriate griping, the column crossed the initial point an hour after midnight under radio listening silence, with the reconnaissance platoon’s peeps and light tanks of the 37 Tank Battalion leading as the point.

Then came the advance guard, comprising the light tank company (D/37 Tank (-)), B/53 AIB mounted in halftracks, and a

squad from C Company, 24th Engineer Battalion (Armored) to clear obstacles.

Five minutes back came the main body of the combat command, with the rest of Lieutenant Colonel Creighton W. (Abe) Abrams’ 37 Tank and Lieutenant Colonel George Jaques’ 53 AIB; the M7 105mm “Priest” self-propelled Howitzers of Lieutenant Colonel Robert Parker’s 94 AFA with C Battery of 155mm towed howitzers attached from the 177th Field Artillery (FA); two gun companies, of the 704th Tank Destroyer (TD) Battalion; and other attachments. Service and supply elements came separately, under CCR trains command.

The Christmas Eve night was clear and cold, lit by a nearly full moon, while flares and explosions illuminated the northern horizon at Bastogne. As the column twisted through the dark forest areas, bleary-eyed drivers tried to focus on the cat-eye blackout markers of the vehicle ahead. In the open halftracks, armored doughs dozed fitfully and stomped their frozen feet to regain circulation. There were some 400 vehicles in the column that stretched more than 16 miles of road space. Standing operating procedures called for an 8 mph rate of march at a 50-yard closed interval at night (15 mph at a 100 yards open interval by day), with a 1-minute interval between company march units and 5 minutes between battalion march groups (serials), giving a time length of about 2 hours. Thus, the vanguard of the column had already pulled into its assembly area south of Vaux while the rest of the column was still closing on the release point at Molinfaing.

Tactical Organization and Commanders

As the troops topped off their vehicles and got a catnap, their commanders attended a conference for planning the Christmas Day attack. If there were prayers, they were silent and individual. CCR’s mission was flank protection, with the main drive still to be mounted by CCB, in the center. The three combat

commands were deployed abreast, each comprising a tank battalion, an armored infantry battalion, a direct-support armored field artillery battalion, and the normal attachments. The combat commands also had a company each from the tank destroyer, engineer, medical, ordnance-maintenance, and anti-aircraft artillery battalions, as well as a troop from the cavalry/reconnaissance squadron and the military police platoon, along with supporting III Corps artillery.

In Lorraine, each combat command had operated with two battalion-sized task forces, the tank and armored infantry battalions cross-reinforcing each other. But because of the constricted terrain in the Ardennes, there was only one ridge-running road on the axis of advance of each combat command: the Arlon-Martelange highway for CCA; a secondary road through Chaumont for CCB, bounded by the Strainchamps and Burnon Creeks; and the Neufchateau highway for CCR — a zone of advance 8 miles wide. Thus, the tank and armored infantry companies were paired as teams to leapfrog from village to village, with the infantry and tank battalion commanders working closely together. Normal practice for the three company teams was to leapfrog from assault to reserve, to support, with a team’s turn to lead coming up every third turn.

The 37 Tank had three medium tank companies and one light tank company, supported by the M4 105mm assault gun and 81mm mortar platoons of headquarters company. Since each of the 37th’s three medium companies were down to 9 or 10 tanks, instead of 17, they often maneuvered as one unit (rather than in three platoons), deploying from column into line, wedge, echelon, or line of sections formation, depending on terrain. If serious resistance was expected, the armored doughs left their thin-skinned halftracks and “married up” with the tanks in the attack position just short of the line of departure, mounting a squad on the rear deck of each tank. The platoon leaders mount-

To avoid possible minefields astride the highway, the armored attack swung off the hardtop beyond Vaux into a secondary road that might be less defended. The terrain was fairly open — snow-covered fields, patches of dark woods, and stone-built farm villages dotted the countryside.

ed their counterparts' tanks to facilitate control by using the tank company radio frequency. The tank company commanding officer commanded the team's assault until the infantrymen dropped off and went into action on their own.

Each team advance would be preceded by direct fire from the supporting team, a sharp artillery concentration on call by the forward observer in his tank, and tactical air support by P-47 fighter planes, if available. The few air controllers were normally at combat command headquarters.

The commander of the 37 Tank was chunky, 29-year-old Lieutenant Colonel Creighton W. (Abe) Abrams, who was already making a fighting name for himself. In 1944 campaigns, Abrams' aggressive leadership of the 37 Tank, under the skillful direction of Colonel Bruce C. Clarke of CCA, did much to establish "P" Wood's 4th Armored as Patton's favorite division. (When the German Ardennes offensive began, Clarke had gone to CCB of the 7th Armored with a brigadier general's star and was blunting the German drive in the St. Vith sector as the 4th fought toward Bastogne.) Abe's combat philosophy was simple, "Our operations are all based on violence," and "Go East, it's the quickest way home."

Abrams had developed the 37 Tank as a finely honed fighting unit. His staff not only functioned well as such, but he often used his staff officers to direct his attacks. They would monitor both battalion and company radio frequencies, leaving company commanders free to handle their units, yet the battalion commanding officer kept in close touch with the situation.

As the 105mm assault gun tank of each company was frequently grouped with the battalion assault gun platoon, so too did Abe take the seventeenth tank from each of the medium companies and give them to his S2, S3, and liaison officer (LNO). These headquarters tanks, with those of the commanding officer and the executive officer, received names beginning with "T," just as the company tank name began with the company letter. Thus, Abe rode in "Thunderbolt VI" (he would wear out seven M4s during the war), with its name painted on its flanks in 8-inch letters on a background of billowing white clouds punctured by jagged red streaks of lightning. "We can always spot his

tank," said A/37's commander, Lieutenant John Whitehill, "because it doesn't roll ahead like others. It gallops." And in the hatch was Abe, his long, black unlighted cigar clenched in his teeth, aggressively jutting forward, looking like "just another gun." He led by courageous example and the 37th's motto was "Courage Conquers."

The 53 AIB was still absorbing replacements from the Lorraine fighting. The armored infantry had long since discarded their 57mm antitank (AT) guns as useless against German panzers, and the AT platoon of each of the three rifle companies was used as a fourth rifle platoon or as replacements. Though badly under their TO&E strength of 10 men (excluding the halftrack driver), the three rifle squads of each platoon augmented their firepower by mounting an additional machine gun on their halftrack, and by trading tanker jackets for Browning automatic rifles (BAR) and Thompson submachine guns (Tommy guns). The rifle platoon leaders each had a 60mm mortar squad and a light machine gun (LMG) with two .30-caliber LMGs to provide fire support, backed up by the battalion assault gun, mortar, and machine gun platoons.

The commander of the 53 AIB was Lieutenant Colonel George L. Jaques, "Jigger Jakes," whom his fellow Bay Stater, Abrams, addressed over the radio as "Sad-sack." In fast-moving armored combat, nicknames were preferred to the daily changing signal operating instructions (SOI) call signs, and voice recognition as authentication. More orthodox than the tanker "going by the book," Jaques was ably seconded by his battalion executive officer, Major Henry A. Crosby. The 53 AIB was an experienced outfit. Both battalion commanders had more tactical experience and expertise than their CCR commander and it was Abe who headed the final drive to Bastogne.

Armored Assault

At 1100 hours on Christmas Day, the drive began. The German combat outpost line was quickly scattered as CCR tanks roared down the highway, firing as they went. In fact, the only obstacles encountered were those emplaced earlier by American engineers withdrawing from the onslaught of the German offensive. The 37th's S3, Captain Bill Dwight, had hit a mine on the night road march in his

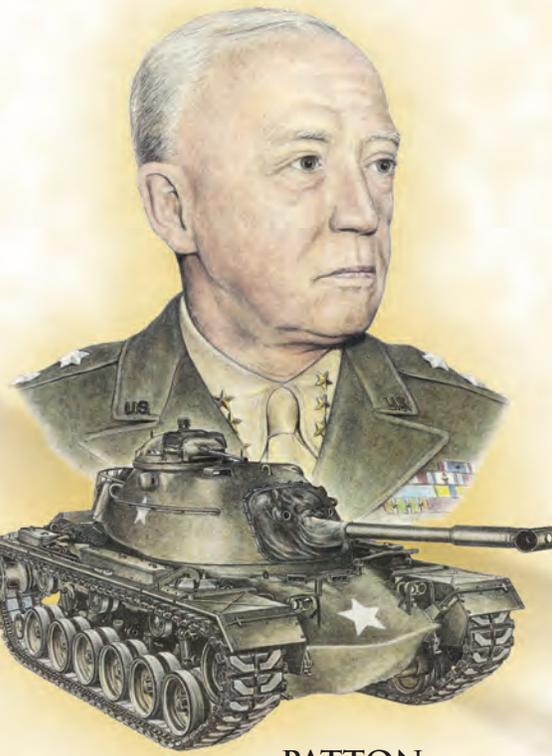
tank "Tonto." It was an American mine, "fortunately," and only broke a track block, which was soon replaced. While returning to his command post the next day, Abe hit another mine that tossed him out of his peep — unscratched — but totaled the peep and crippled his driver. "Another lesson about marking minefields," wryly observed the 37 Tank XO, Major Ed Bautz.

As Baker Company of the 53 AIB cleaned out Vaux-les-Rosieres, the armored spearhead continued up the highway toward Bastogne, 10 miles ahead.

The German main line of resistance was probably astride the highway itself, covering the primary armor approach. But the available intelligence, such as it was, was not of much help. Red penciled enemy symbols cluttered the situation maps, many with question marks. (It is now known that it was the 5th Parachute Division that had responsibility for protecting the German southern flank, while the 26th Volksgrenadier Division invested Bastogne, launching attacks in conjunction with the 15th Panzergrenadier and Panzer Lehr Divisions.)

To avoid possible minefields astride the highway, the armored attack swung off the hardtop beyond Vaux into a secondary road that might be less defended. The terrain was fairly open — snow-covered fields, patches of dark woods, and stone-built farm villages dotted the countryside. D Company's light tanks and M18 Hellcat TDs outposted the flank beyond Petite Rosiers, while C Troop, 25th (C/25) Cavalry Squadron screened the open flank to the west. Now, the main attack began to pick up momentum. Team A tanks and infantry drove into Nives, supported by Team C, and then Team C passed through the town before it was cleared on its way to Cobreville. Radio contact with battalion was lost, but C/37 Tank's commander, Lieutenant Charles Boggess, who had taken over the tank company only 2 days before, acted on his own initiative and continued the attack. While his team cleared the town, Boggess dismounted from his tank around 1400 hours to reconnoiter an area where the road crossed a small creek, and found the bridge had just been blown. Colonel Abrams called up his tank bulldozer, which crumbled a

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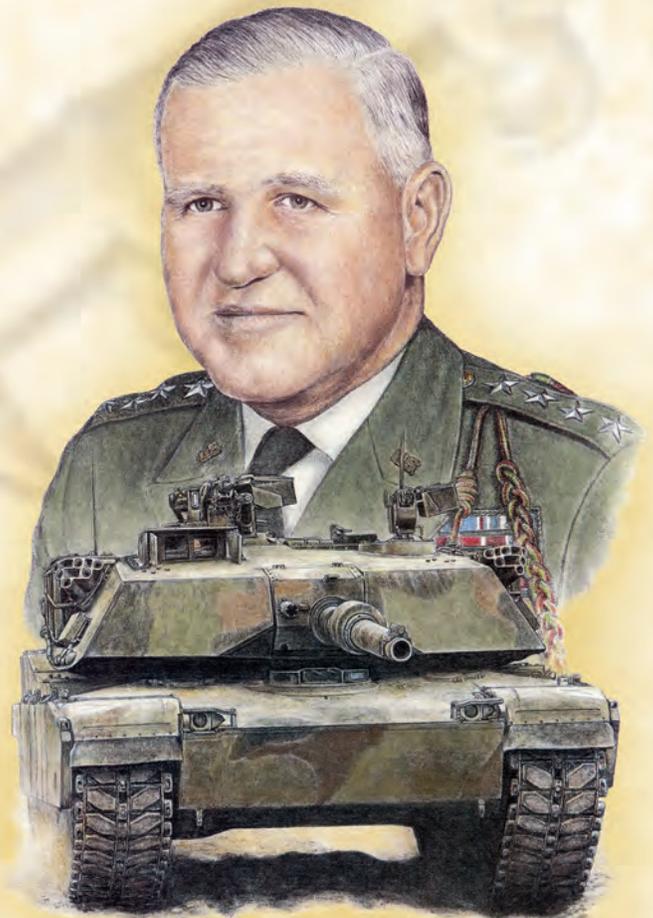
PATTON



CHAFFEE



PERSHING

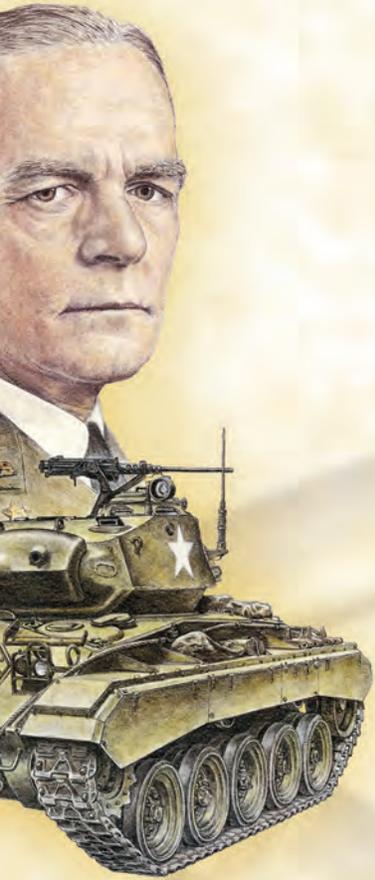


ABRAMS

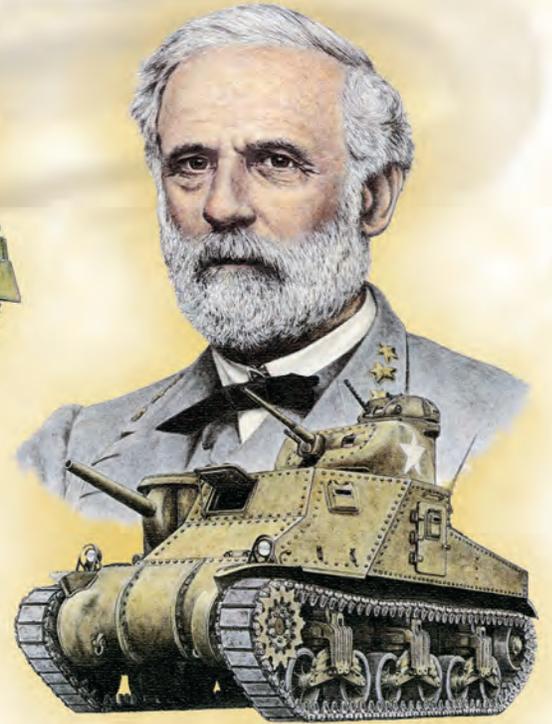


SHERIDAN

HARMON



SHERMAN



LEE



BRADLEY



STUART

Bastogne *continued from Page 39*

nearby stone wall and pushed it into the gap so the drive would continue — it was moving again by 1530 hours.

Since the Cobreville Bridge had been prepared for demolition, it was likely that Remoiville would be defended. Four artillery battalions pounded the town for 10 minutes, while the supporting Shermans blasted the stone buildings: “Gunner! Kraut Bazooka! Barn! H-E! Traverse Right! Steady! ... On! Eight hundred! Fire!” Then, Team A charged into the dust and rubble, with the tanks firing high-explosive rounds and spraying machine gun fire everywhere. B/53 AIB came in to help during the house-to-house fighting — it was “toss a grenade through a window, kick open the door, leap in and to the side, and spray the room with Tommy gun fire!” High-velocity tank shells screamed through the upper floors, sending plaster dust flying. By 1800 hours, 327 POWs had been rounded up from the 3d Battalion, 14th Parachute Regiment.

The advance had already rolled through Remoiville, but leading elements encountered a crater in the road as dusk fell. B/37 Tank worked around to the left and took up positions in and around Remoiville, overlooking Remichampagne, while infantry screened the woods to the west. CCR was now abreast of CCB, which was in sight across the gorge of Burnon Creek, after having finally driven the German paratroopers out of Chaumont. CCA had likewise slugged ahead up the Arlon highway, but now the Germans were reinforcing their front to stop 4th Armored.

Change in Mission

On Christmas night, the infantry line companies dug in fronting on the Bois de Cohet and Remichampagne, 6 miles from Bastogne. The 94 AFA displaced, by battery, up from Juseret to just south of Sure, from where its 105mm self-propelled howitzers could range to 12,000

yards or almost to the outpost lines of the 101st Airborne Division. During the evening, a German counterattack came down the highway from Sibret, but was warded off by tank destroyer and artillery barrages.

The 37 Tank and 53 AIB command posts moved into Cobreville, and the command post of CCR relocated to Vaux. The command posts were set up in towns, with the stone buildings providing both warmth and protection from shell fragments, and the radios from the headquarters tracks were remoted inside.

Colonel Blanchard came forward to meet with Abrams, Jaques, and Crosby. CCB was still slated to flank onto the Arlon highway and enter Bastogne. Accompanying CCB was a fretting Major General Maxwell Taylor, who had been on leave in the States when his 101st Airborne entrucked for the Ardennes. Now, he was impatient to rejoin his command.

CCR was to cover the left flank, advancing through Remichampagne and Clochimont and then turning left toward Sibret, which was held in strength. The battalion commanders were vehemently opposed to attacking Sibret. Instead, they urged a drive directly to Bastogne. Blanchard was concerned about the left flank thus being exposed, but finally gave in at about 0300 hours, stating, recalls Major Crosby, “that if we failed it was on our heads and not his as he was refusing to take any responsibility.” The battalion commanders then issued oral attack orders to their company commanders — armored units didn’t take time to draw up five paragraph field orders.

As dawn broke on December 26, CCR moved over frozen ground with Team B, under Captain Jimmie Leach in “Blockbuster III,” in the lead. Teams A and C laid down a base of fire into the Bois de Cohet and Remichampagne. Lieutenant Don Guild, in his FO [forward observer]

tank, prepared to lift fires as the attack went in. Suddenly, P-47 fighters, probably from the 362d Fighter Group, appeared overhead. They had not been called in and there was no forward air controller to coordinate their actions, but they flew in, bombing and strafing only a few hundred yards ahead of the tanks, and sent the Germans diving for cover. Nonetheless, house-to-house fighting gave Team B a 2-hour fight before the town was secured at 1055 hours.

Meanwhile, the armored column passed through Remichampagne and, finding the Burnon Creek Bridge intact, continued up the road to the crossroads to Clochimont. There, Lieutenant Guild dismounted from his FO tank, and personally captured about a dozen Germans, who were cowering in their slit trenches from the fierce assault.

Moments after joining Leach at the crossroads and reviewing the situation, Colonel Abrams ordered A/37 Tank to seize the high ground to the left of Clochimont. But as A/37 arrived on position, its tanks received several rounds of AT fire from a position down the road to the right front of Abrams in “Thunderbolt.” “Gunner! Steady ... On! Twelve hundred! Fire!” Once again, Abrams proved he had the best tank crew in the 37th. “Target! Cease fire!”

By now, the 37 Tank was down to 20 of its 53 T/O&E medium tanks, and the 53 AIB was short 230 riflemen. While Abrams and Jaques were coordinating their planning, hundreds of C-47 transport planes thundered low over them, heading for Bastogne like flocks of fat geese. Red, yellow, and blue parachutes with supplies began blossoming out over the town. But so did ugly bursts of German flak, and several planes arched down, streaming flames. Since Leach’s Team B had gotten this far rather easily, Abrams was ready to drive for Bastogne and radioed the division commander directly. The oth-



er two combat commands had made less than a mile each on the 26th. At 1400 hours, Gaffey telephoned Patton, who quickly gave approval for Abrams to move on Bastogne.

CCR artillery prepared to fire on Assenois. A and C Batteries, which had displaced forward to Nives, would fire on the woods north of the town; B Battery on the south edge of the town and the 155s of C/177 FA on the center. Additionally, Abe called Major Ray Mason, S3, 22d AFA, who tied three artillery battalions to a neighboring CCB, which gave a total of 13 batteries to annihilate any enemy force in Assenois. D/37 and A/37 Tank were to overwatch the Sibret road on the left flank and give warning of any German tank movements.

Abrams then called his S3, Captain Bill Dwight, to bring up Team C from reserve. Lieutenant Boggess mounted the battalion commander's tank for a briefing at the Clochimont crossroads. There had been no reconnaissance up the road, but the area was known to be strongly defended. Abe told him simply, "Get to those men in Bastogne." The Charlie Company commander called his eight tank commanders together and told them he would lead and set the speed of the attack. "You all know we've got to get to those men in the town. All you've got to do is keep 'em rollin' and follow me. It won't be any picnic, but we'll make it."

Final Breakthrough

At 1620 hours, Abe gave the familiar hand signal, "Let 'er roll," and the tanks moved out. Boggess picked up speed, tracks squealing, and charged right through Clochimont toward Assenois, guns firing. Three miles to go. Boggess in C-8, "Cobra King," fired straight ahead, Lieutenant Walter Wrolson in the second tank fired to the right, the third tank to the left.* The Shermans pumped fire in all directions, firing on the move, with their gyrostabilizers enabling them to maintain the momentum of the attack. "I used the 75 like a machine gun," said "Cobra King's" gunner, Corporal Milton Dickerman. Boggess had instructed him to choose his own targets. "Murphy was plenty busy throwing in the shells. We shot 21 rounds in a few minutes and I don't know how much machine gun stuff."

As soon as he had cleared Clochimont, Boggess called Abe for artillery fire on Assenois. Abrams radioed, "Concentration Number Nine, play it soft and sweet." Almost immediately, the town seemed to erupt in a chaos of explosions. At the edge of the town, Boggess called for the artillery to lift 200 yards and barreled on in

without pausing. But there was German fire, even if erratic; Lieutenant Chamberlin's FO peep was hit and he went into a ditch, and it was Lieutenant Billy Wood in a Cub plane overhead who finally got the fire lifted.

Leaning into friendly artillery fire cut losses from enemy resistance, but Assenois was a murky haze of shell bursts and the dust of collapsing houses. Tank commanders in combat usually rode with head and shoulders out of the hatch because visibility through the periscope was too limited; but Boggess had to pull his hatch down to 3 or 4 inches above the turret roof because shell splinters were singing off the armor. Dirt from an earlier enemy shell burst had smeared the driver's periscope, and Hubert Smith "sort'a guessed at the road." In addition, the left brake locked and the "Cobra King" swerved up a side street. Two other tanks also took wrong turns.

Walt Green's C Company infantrymen had been following in their halftracks, but artillery fire was still coming in and they piled out of their open-topped, thin-skinned vehicles to seek any shelter they could find in the town. Simultaneously, the defenders emerged fighting from the cellars and the armored doughs mixed it up with the German paratroopers and Volksgrenadiers well into the night.

Nineteen year-old Private Jimmy Hendrix went swinging into two 88mm gun crews with his M1 rifle, forcing them to surrender. He then silenced two machine guns and dragged a dying GI from a burning halftrack, all of which earned him the Congressional Medal of Honor. Abrams followed into the confusion that was Assenois, and even dismounted his tank to help wrestle a fallen telephone pole off a tank to keep the attack moving.

Boggess cleared Assenois with three tanks as dusk fell. A gap in the column had opened that gave the Germans a chance to throw some Teller mines onto the roadway from a dark tree line and blow up a following halftrack. Dwight was right behind in his Sherman, "Tonto," and helped clear the wreckage and toss the mines aside. The column moved forward again, running a gauntlet of Panzerfausts, mines, and small-arms fire. Four more halftracks were lost. Dwight was simultaneously trying to raise Brigadier General Anthony McAuliffe and the 101st Airborne; "Tony, this is one of Hugh's boys, over," on channel 20 assigned the command, but to no avail.

Up ahead, "Cobra King" led the spearhead. Dickerman slammed three main gun rounds into an old camouflaged con-

crete pillbox and the bow gunner, Harold Hafner, traversed his machine gun through a chow line of appalled German soldiers standing under the snow-covered fir trees, knocking them over like dominoes. Suddenly, the tanks debouched from the woods into an open field where multicolored supply parachutes dotted the snow. Boggess slowed as he approached a line of foxholes, and called, "Come on out, this is the Fourth Armored." No answer from the wary GIs. Finally, a khaki-clad figure emerged to shake his hand. "I'm Lieutenant Webster of the 326th Engineers, 101st Airborne Division. Glad to see you." At 1645 hours, CCR logged in its journal: "Hole opened to surrounded forces at Bastogne..."

"Tonto" was the fourth tank to arrive, followed by more halftracks and the other tanks, as paratroopers gathered around, beginning to realize the siege was finally over. Noting the clean-shaven faces, Dwight muttered, "Well, things don't look so goddamn rough around here to me." The airborne felt that discipline and morale were closely related. One of the paratroopers asked the veteran tank battalion S3 if all tanks were commanded by officers, rather like the Air Corps, as there were three officers in the first four tanks. Dwight said "no," but it was a significant observation; leadership in the 4th Armored was up front. Dwight then met McAuliffe who had come up to the perimeter. To his salute, the general replied, "Gee, I am mighty glad to see you." Abrams joined them shortly thereafter.

Back at Assenois, B/53 AIB, under Lieutenant Robert "Potsi" Everson, was committed to help clean out the town, some 500 POWs and heavy artillery pieces, including four 88mm guns and a battery of 105mm howitzers, finally were taken. A/53 AIB passed through to clear the dense woods northeast of the town. Lieutenant Frank Kutak, though wounded in both legs, nonetheless, directed the company from his peep as the armored doughs worked through the fir trees. Tankers of A and B Companies, 37 Tank, defended the left flank of the corridor. That same night, the division G4, Lieutenant Colonel Knestrick, led a column of supply trucks and ambulances through to Bastogne, escorted by D/37 Tank light tanks. Wrote Patton happily — if with hyperbole — to his wife, Beatrice, "The relief of Bastogne is the most brilliant operation we have thus far performed and is in my opinion the outstanding achievement of this war."

CCB widened the corridor on 27 December, even as CCA of the 9th Armored came up on the left flank, and the 35th



Infantry Division came up on the right. The Germans had already called off their Ardennes offensive. The high drama of the breakthrough to Bastogne had passed into a bitter struggle of attrition in the winter snows.

Critique of Operations

The breakthrough to Bastogne vividly demonstrated what an elite armored unit in action can do:

- Though understrength and fighting under less than favorable conditions of terrain and weather, the 4th Armored Division brought overwhelming force to bear at the decisive point.
- The battalion task force organization was modified to one of joint infantry-tank company teams that leapfrogged one another in a column of companies to maintain the momentum of the attack.

- The reserve company passed through to attack the next objective even before the first objective had been secured, keeping the enemy off guard.

- The tanks' gyrostabilizers enabled them to smother the defense with fire while moving across the battle area, and leaning into friendly artillery fire gave the defenders no chance to recover.

- Preplanned and hip-shoot artillery concentrations, air strikes, and organic supporting bases of fire further overwhelmed the defenders.

True, such cavalier tactics would be less successful against a well-prepared defense; but in this instance, the Germans were not given time to prepare. Nonetheless, the principle of bringing the full force of infantry, armor, artillery, and airpower to bear at the point of the main effort re-

mains valid today, and is exemplified by the combined arms team.

Of particular note is the quality of personal leadership, both in direction and by example. The company, and even battalion, commanders were well forward or leading in their combat vehicles, providing leadership up front at the decisive point. Orders were oral, simple, and of the general "mission type." This encouraged initiative on the part of junior officers, who knew where to go and were confident their commanders were with or right behind them.

Lastly, at a time when many were bewailing the inferiority of the American Sherman tank, the 4th Armored maintained unbounded confidence in themselves and their equipment. *For "armor" was a concept, of a combined arms team, and when all elements were brought to bear, they were bound to prevail.*



The C-8 "Cobra King" crew — First Lieutenant Charles Boggess, Corporal Milton Dickerman, Private James G. Murphy, Private Hubert S. Smith, and Private Harold Hafner — pose for a celebratory photo in the vicinity of Bastogne shortly after the tankers led the armor and infantry column that liberated the city.



Notes

The 4th Armored Division Operations are based on unit diaries, journals, and after-action reports, U.S. Army Armor School special studies, Military History Institute oral history projects, and published sources. Research in these materials was supported, in part, by an Ohio State University, Newark Campus, research grant. Dr. John Slonaker, Dr. Richard Sommers, and Ms. Phyllis Cassler of the U.S. Army Military History Institute, Carlisle Barracks, Pennsylvania, were very helpful, as was Mr. William Hansen, U.S. Army Armor School librarian, Fort Knox, Kentucky. Interviews with veterans were facilitated by Samuel Schenker and the late Frank Paskvan of the 4th Armored Division Association. Correspondents include Major Generals Edward Bautz Jr. (37 Tank) and DeWitt C. Smith Jr. (B/53 AIB); Colonels (Retired) Robert Connolly (4th Division adjutant and G1), William Dwight (37 Tank), H. Ashton Crosby (53 AIB); and Charles Boggess (C/37 Tank); and especially Colonel (Retired) James H. Leach (B/37 Tank), who helped revise the manuscript.

*The Cobra King is currently under restoration at the Patton Museum, Fort Knox, Kentucky.

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Depth and Synchronization at the Battle of Heartbreak Ridge:

The 72d Tank Battalion in Operation Touchdown

by Captain Scott D. Aiken

(Reprinted from the September-October 1992 *ARMOR*)

The application of what is now the Air-Land Battle [Army doctrinal] tenets of depth and synchronization resulted in the 72d Tank Battalion's success in Operation Touchdown from 10 to 12 October 1951. This operation led to the ultimate victory of the 2d Infantry Division at the Battle of Heartbreak Ridge in Korea. In this operation, both tenets were used with highly favorable results. The 72d Tank Battalion's actions in Operation Touchdown characterized depth in time, space, and resources. This armored attack is also a perfect example of synchronization with its classic use of combined arms tied to excellent engineer and logistics plans.

Early in the autumn of 1951, General Matthew Ridgway authorized limited objective attacks to seize important terrain features across the Korean front. Lieutenant General James A. Van Fleet, Eighth Army commander, determined that it was necessary to improve the position of his right flank. This decision led to the Battle of Heartbreak Ridge being fought by the 2d Infantry Division.¹

Heartbreak Ridge was an extension of Bloody Ridge and was located in the eastern part of the Eighth Army's sector. Heartbreak Ridge was a long, narrow ridge running north to south. It was located between the Mundung-ni Valley to the west and the Satae-ri Valley to the east.²

Operation Touchdown was conceived after the 2d Infantry Division conducted several unsuccessful piecemeal frontal assaults against strong North Korean defenses from 13 September to 1 October. These attacks were never larger than battalion strength and repeatedly stormed Hills 931 and 851. These endeavors proved costly and ineffective. Despite the valiant efforts of the 2d Infantry Division, the enemy retained Heartbreak Ridge with strong defenses; positions were so elaborate that some bunkers could hold an entire 1,000-man North Korean regiment.³ Major General Robert N. Young, 2d Infantry Division commander, decided that these frontal attacks should cease. Instead, he called for a coordinated attack by the entire division, supported with powerful



Key to the 72d Tank Battalion's fight was the "Easy 8" M4 Sherman.

combined arms assets.⁴ This attack was designated "Operation Touchdown."

Operation Touchdown was so named because it involved a long "end run" around the flank of the enemy at Heartbreak Ridge to cut his lines of communication, concentrated at the northern entrance to the Mundung-ni Valley.⁵ General Young believed that Operation Touchdown would work because the simultaneous advance of all three regiments in the division would eliminate the enemy's advantage of being able to concentrate his fire, particularly mortars. Once the attack commenced, the enemy would be hard pressed to move reinforcements from one sector to another.⁶

The advance of the regiments would be supplemented with two powerful armored thrusts. One attack would be conducted up the Satae-ri Valley. This task force would break behind enemy lines, disrupt enemy communications, and inflict casualties. The second armored thrust was the key to Operation Touchdown. It was to

be a tank/infantry drive up the Mundung-ni Valley.⁷ Operation Touchdown was a drastic shift of technique in the Heartbreak Ridge battle, trading relentless frontal assaults for maneuver against the enemy's weak points.

The effective use of armor by the 2d Infantry Division was to be the key to Operation Touchdown's success. Task Force Sturman was organized with tanks and elements from the 23d Infantry Regiment. It began operations on 3 October as a supporting effort. Task Force Sturman was to conduct several raids in the Satae-ri Valley east of Heartbreak Ridge to engage the North Korean emplacements from the rear. When the infantry attacks began, the task force was to keep the enemy pinned down.

On the opposite side of the division sector, the advance of the infantry would provide cover for the division's engineers building the tank track to Mundung-ni. When the job was finished, the tanks of the 72d Tank Battalion would duplicate

the job of Task Force Sturman, but on a larger scale.⁸ Operation Touchdown made great use of the tank/infantry team to conduct extended maneuver into the enemy's rear.

Supporting arms would play an important role in the attack of the 72d Tank Battalion up the Mundung-ni Valley. The 5 days before Operation Touchdown were used to extensively plan and coordinate

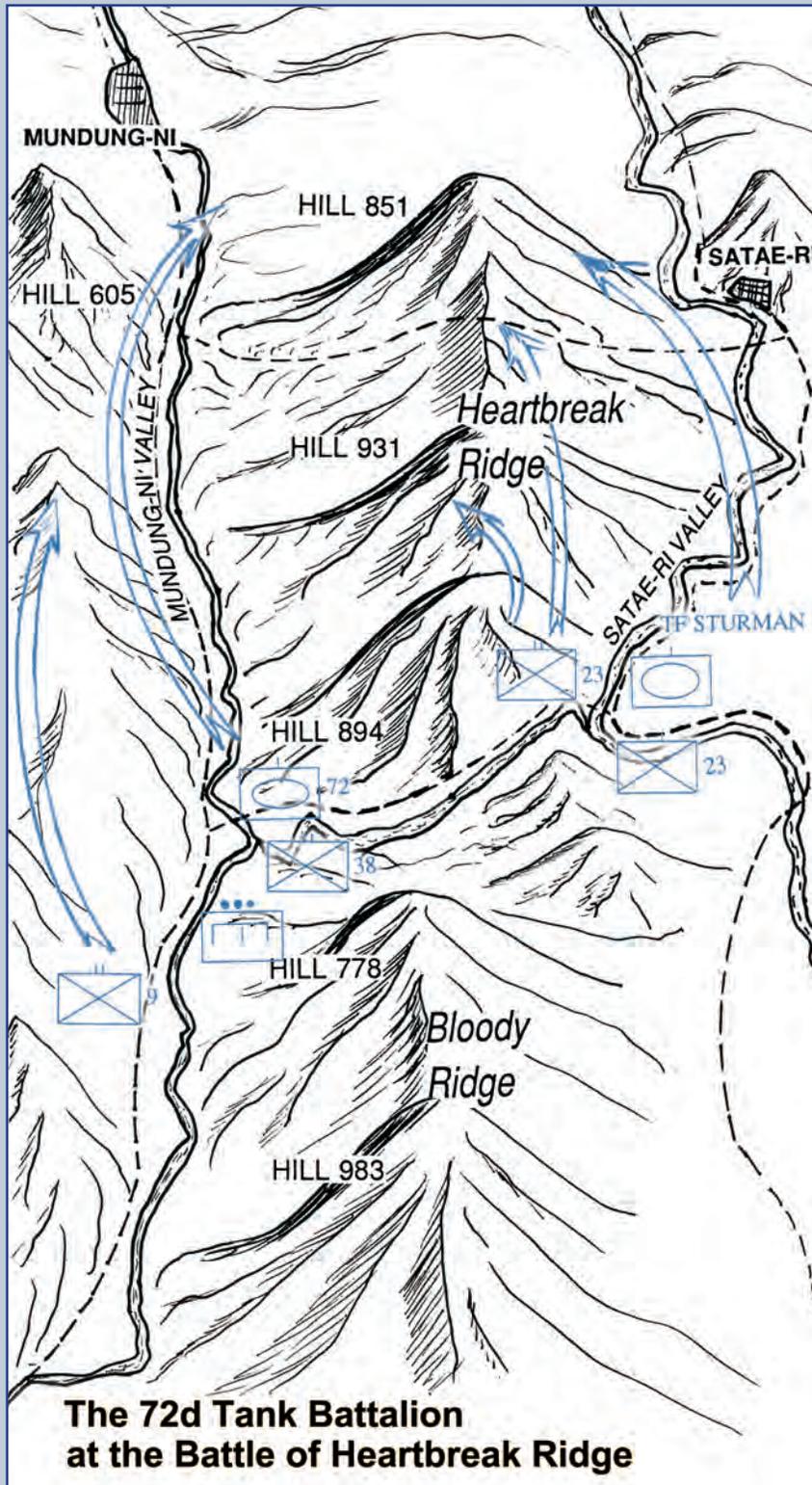
supporting arms.⁹ Artillery, mortars, and close air support would be used considerably before and during Operation Touchdown. Additionally, the machine guns of the 82d Antiaircraft Battalion were used to suppress enemy positions in the hills overlooking the valley where vital engineer projects were being conducted. This suppression allowed engineers to clear the valley floor of enemy mines and obstacles with little opposition from communist patrols or snipers.¹⁰ This is an example of the efficient use of all available resources allocated to the division commander to increase his combat power.

The 72d Tank Battalion's foray in the Mundung-ni Valley was reinforced by a massive engineer effort. Preliminary engineer endeavors began as early as 1 October when Lieutenant Colonel Robert W. Love, the division engineer officer, was ordered to get a road to Mundung-ni ready for tank traffic. The time schedule would not allow for an entire road to be built. The existing road would have to be widened and repaired in some parts and completely built in others. Sections had to be bypassed and built or widened later.

One detour used was a stream bed, which complicated the effort. Enemy antitank mines were laid throughout the valley.¹¹ "The road ... leading to the Mundung-ni Valley had been virtually obliterated by an elaborate pattern of cratering done with the avowed purpose of blocking a tank thrust."¹² Countermine operations, obstacle reduction, and road building in the Mundung-ni Valley were extensive and lasted throughout the operation. However, the fruits of the engineer's efforts would be reaped when the 72d Tank Battalion violently overran Mundung-ni.

The logistics preparation for the 72d Tank Battalion's actions was supervised by Lieutenant Colonel Arthur Cornelison, G4, 2d Infantry Division. This preparation began around 1 October. Special equipment would allow tanks to move over obstacles or wet areas. This equipment was obtained and issued to the 72d Tank Battalion.¹³

A requirement for numerous explosives and for tactical bridging was foreseen before the operation and was acquired.¹⁴ The 2d Engineer Battalion would later use over 40 tons of explosives in clearing mines and building the road up the Mundung-ni Valley.¹⁵ This liberal use of explosives was the only technique that would allow such a massive engineering endeavor to take place rapidly. Extensive logistics preparation allowed for this requirement of explosives to be met. This ex-



pense in explosives was fully justified by reducing vehicle and equipment losses.¹⁶

The projected daily expenditure of artillery ammunition for the division totaled 20,000 rounds, which made up the bulk of the 1,200 tons of supplies that needed to be moved forward each day, more than the division's organic transportation would allow. Thus, the use of forward supply dumps and air-delivered supplies would supplement the division's trucks. Air drops of food, ammunition, and medical supplies were of inestimable value during Operation Touchdown.¹⁷

By 2 October, the logistics portion of the operations order was nearly complete and planning continued for an ammunition supply point and emergency class I and class III dumps. The task then turned to stockpiling fuel, rations, and ammunition at these forward areas.¹⁸ Considerable forethought and effort by the 2d Infantry Division G4 ensured that all fuel, demolitions, and ammunition requests were met. This allowed the 72d Tank Battalion to conduct its attack fully supported with supplies, engineer efforts, and indirect fires.

Considerable preparatory bombardment of the Mundung-ni Valley by U.S. warplanes and artillery began days before the operation. On 3 October, 35 sorties were flown on planned objectives. On 4 October, 7,100 rounds of artillery ammunition and 45 sorties of air strikes were used.¹⁹

Task Force Sturman was active on 4 October. In less than 3 hours, the force knocked out 14 bunkers of the North Korean 19th Regiment in the Satae-ri Valley.²⁰ By 5 October, over 45,000 rounds of artillery ammunition were trucked to the ammunition storage point near Polmal. Additionally, 20,000 gallons of fuel and large amounts of rations were moved to forward supply dumps.²¹

As H-hour approached, artillery expenditure increased dramatically and Marine Corps Corsairs attacked enemy positions with napalm, rockets, and machine guns.²² Supporting arms were brought to bear on the initial objectives of all three regiments. On the evening of 5 October at 2100 hours, Operation Touchdown commenced. The 2d Infantry Division initiated the attack with the 9th, 23d, and 38th Regiments abreast. By early the next day, the central peak of Heartbreak Ridge at Hill 931 was in the 2d Division's possession as the attack moved to the north.²³ Task Force Sturman continued its effective runs up the Satae-ri Valley. On 6 October, the task force destroyed 35 enemy bunkers.²⁴ This armored task force con-



Half-track-mounted quad .50 calibers, nominally air defense weapons, were often used in Korea to suppress infantry ambushes. They kept patrols and snipers from interfering with road improvements prior to the "end run" up the Mundung-ni Valley in Operation Touchdown.

tinued its success on 9 and 10 October by destroying several enemy bunkers on Hill 851.²⁵

On 10 October, the road to Mundung-ni was complete. Infantry from the 23d and 38th Regiments seized Hills 931 and 605. With these hills under friendly control, the tanks would be protected from enemy antitank squads in most of the restrictive Mundung-ni Valley.²⁶ On 10 October at 0630 hours, the 72d Tank Battalion complemented the division attack with an armored drive up the Mundung-ni Valley.²⁷

This drive consisted of 68 Sherman tanks and a battalion of the 38th Infantry Regiment that accompanied the tanks to counter any enemy antitank squads.²⁸ This allowed for the maximum mutual support between the tanks and the accompanying infantry. The division plan called for the 72d Tank Battalion to withdraw only as far as necessary to get infantry protection. All fuel, maintenance, and ammunition were to be taken forward to them.²⁹ This was accomplished thanks to the extensive logistics planning and stockpiling before the operation.

The success of the 72d Tank Battalion in making its 8-mile attack up the Mundung-ni Valley was due in part to detailed staff planning. Extensive ground reconnaissance, aerial observation, engineering skill, and infantry support was coordinated to produce a highly synchronized attack. On 10 October, the village of Mundung-ni was seized. The tanks then pushed 1 kilometer north of the village and placed fire on the reverse slope

of Hill 841 (slightly NW of Hill 605). Tank losses for the day were surprisingly light, with two tanks destroyed and five damaged.³⁰

The communists were surprised at the appearance of tanks in their rear areas.³¹ The unexpected appearance of tanks at Mundung-ni had caught the Chinese troops of the 204th Division, 68th Army, in exposed positions. These troops were then in the process of relieving elements of the mauled North Korean Fifth Corps.³² The presence of Chinese units was proof that the North Koreans had been badly hurt by Operation Touchdown to the degree that help had been sent.³³

After 10 October, the 72d Tank Battalion made daily thrusts further up the valley on 11 and 12 October, destroying enemy forces and supply dumps each day. The tanks would pull back to the forward infantry units each night for protection.³⁴ These daily thrusts are an example of depth in time. The attacks by the 72d Tank Battalion kept relentless pressure on the enemy for 3 days.

The last objective on Heartbreak Ridge was Hill 851. It was finally seized by the 23d Infantry Regiment on 13 October. After several counterattacks in an attempt to reclaim Heartbreak Ridge, the assault was beaten back.³⁵

The 2d Infantry Division won the Battle of Heartbreak Ridge at the cost of 3,700 casualties.³⁶ Estimates of enemy losses totaled close to 25,000.³⁷ This battle marked the last major UN offensive before the resumption of peace talks in

1951.³⁸ However, months of heavy fighting remained while peace negotiations were ongoing. During these months, the front line along the Eighth Army sector remained exactly where it had been placed by Operation Touchdown.³⁹ Operation Touchdown can, therefore, be considered one of the final decisive actions of the Korean War.

The 72d Tank Battalion's action in Operation Touchdown was a classic example of the AirLand Battle tenet of depth. Depth is the extension of operations in time, space, and resources. By using depth, a commander can obtain the necessary space to maneuver effectively. He can also gain the necessary time to plan, arrange, and execute operations and the necessary resources to win.⁴⁰

The attack by the 72d Tank Battalion was extended in space, time, and resources. The armored thrust of several miles to Mundung-ni was an extension of the division attack deep into the enemy's flank and rear. It was possible due to exhaustive engineer mobility efforts. The duration of the operation placed relentless combined arms attacks against an outmaneuvered enemy. Prolonged artillery and aerial bombardment in support of the armored thrust also contributed to the extension of Operation Touchdown in time and space. Additionally, the resources dedicated and expended on the 72d Tank Battalion gave depth to the effort. A massive logistics build-up preceded the operation and ensured that ammunition, fuel, and other supplies were available for a protracted armor campaign in both duration and space.



The snow in this winter view reveals the typical hilly Korean terrain that challenged the 2d ID and the 72d Tank Battalion. Narrow valley floors were easy to block and transverse ridges offered snipers good cover. Deep bunkers higher up resisted frontal assault and often could accommodate an entire North Korean or Chinese regiment.

Synchronization is the arrangement of all forces and actions on the battlefield in time, space, and purpose to produce maximum combat power at a decisive point.⁴¹ Synchronization includes the integration of maneuver forces, supporting arms, and combat service support forces for the desired results.

The synchronization of the preparatory artillery and aerial bombardments, the engineer efforts, the supporting attack by Task Force Sturman, and the armored drive of the 72d Tank Battalion all led to the build-up of combat power against communist forces in the Heartbreak Ridge and Mundung-ni area. Vigilant operational security allowed concealment of the progress of the engineers along the road to Mundung-ni. This contributed to the surprise of the armored thrust up the valley.⁴² The shock effect of massed armor in the enemy's rear areas discouraged its initiative toward repelling the infantry assaults to its front, which helped in the capture of Heartbreak Ridge.⁴³ Thorough logistics planning allowed for the sustainment of this combined arms force once the operation was launched.

Operation Touchdown effectively used the AirLand Battle tenets of depth and synchronization. All of the battlefield activities before and during the period from 10 to 12 October focused on the enemy's rear, at the decisive point of Mundung-ni. This is where communist supply lines were eventually cut. The combination of infantry and tanks, supported by close air support, artillery, engineers, and logistics efforts produced a group of synchronized combat systems that could fight in

depth. These forces overwhelmed the static defenses of the North Koreans and led to the successful conclusion of the Battle of Heartbreak Ridge.



Notes

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- ¹⁹ *Ibid.*, pp. 95-96.
- ²⁰ *Ibid.*, p. 93.
- ²¹ *Ibid.*, p. 96.
- ²² Craven, p. 28.
- ²³ Hinshaw, p. 101.
- ²⁴ Love, pp. 328-329.
- ²⁵ Clark C. Monroe, *The Second United States Infantry Division in Korea 1950-1951*, Toppan Printing Co., Ltd., Tokyo, 1951, p. 172.
- ²⁶ *Ibid.*
- ²⁷ Craven, p. 29.
- ²⁸ Freedman, p. 26.
- ²⁹ Hinshaw, p. 112.
- ³⁰ *Ibid.*
- ³¹ Love, p. 330.
- ³² Hinshaw, p. 112.
- ³³ Craven, p. 29.
- ³⁴ Hinshaw, p. 113.
- ³⁵ Summers, pp. 134-135.
- ³⁶ *Ibid.*, p. 30.
- ³⁷ *Ibid.*, p. 135.
- ³⁸ Love, p. 331.
- ³⁹ Craven, p. 25.
- ⁴⁰ U.S. Government, Department of the Army, Field Manual 100-5, *Operations*, Washington, D.C., 1986, p. 16.
- ⁴¹ *Ibid.*
- ⁴² Love, p. 331.
- ⁴³ Freedman, p. 25.

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A Report on the 11th Armored Cavalry in Southeast Asia 1969-70

by Colonel Donn A. Starry

(Reprinted from the January-February 1971 *ARMOR*)

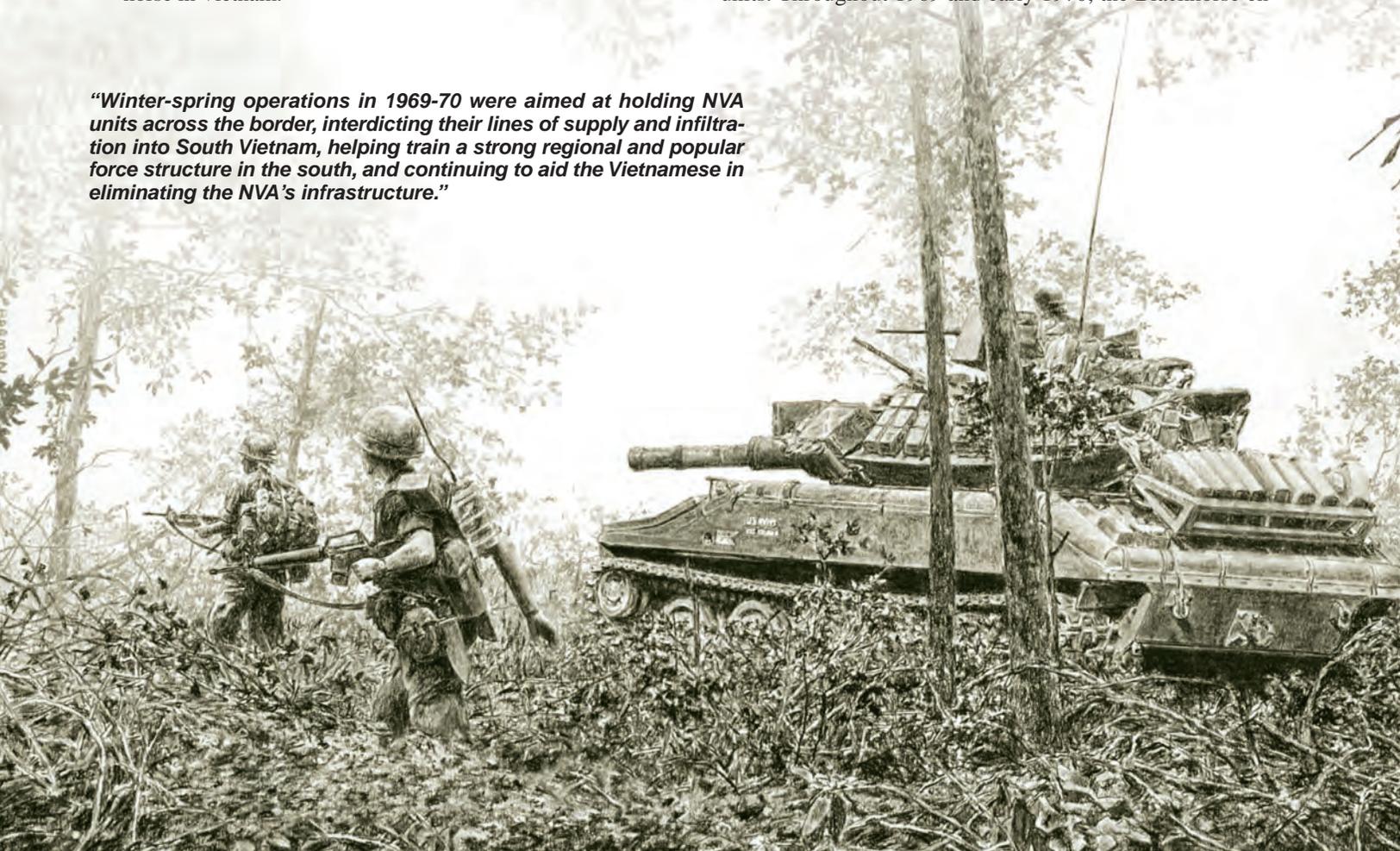
ARMOR has recorded much of the chronicle of the Blackhorse in Vietnam, both in broad reports by regimental commanders and in articles by other members of the regiment, describing small unit actions. General (then Colonel) William Cobb reported in the March-April 1967 edition of *ARMOR*, “11th Cavalry Report,” on early Blackhorse operations in Vietnam. In the March-April 1968 edition of *ARMOR*, “Blackhorse Report II,” Colonel Roy F. Farley continued the coverage from the regimental commander’s viewpoint. General (then Colonel) George Patton described regimental operations from summer 1968 to spring 1969 in the “pile on” articles in the January-February and March-April 1970 issues of *ARMOR*.

Somewhere between the regimental message center and the editor’s “IN” box, Colonel Jimmie Leach’s report on 1969 operations under his command was ambushed, and is still carried missing in action (MIA). Therefore, the present report will sketch in major events during Colonel Leach’s tenure, April through November 1969, as a prelude to describing winter and spring activities during 1969-70, culminating in the entry into Cambodia during May-June 1970. This will preserve at least some of the continuity of *ARMOR*’s coverage of the Blackhorse in Vietnam.

Shortly after Colonel Leach assumed command in April 1969, the regiment moved to northern III Corps, working first with the 1st Infantry Division and later with the 1st Cavalry Division (AM). From May 1969 to mid-June 1970, the regiment was operational control (OPCON) to the 1st Cavalry Division; it was, in effect, that division’s fourth brigade. In conjunction with the shift in operating locale, Colonel Leach moved the regimental command post to Quan Loi in central Binh Long Province, intending to stay a few weeks; it was instead a permanent change of station (PCS) of more than a year. During that year, the regiment ranged through the northern tier of III Corps provinces — Phuoc Long, Binh Long, and Tay Ninh. Blackhorse Base Camp at Long Giao became the home of the 18th Army Republic of Vietnam (ARVN) Division in fall 1969 and the regimental rear took up temporary residence at Bien Hoa Army Base. Later, as 1st Infantry Division units redeployed, the regimental rear took over the 1st Division’s Di An base, closing out of Bien Hoa in April 1970.

War Zone “C” in northern Tay Ninh Province, and most of Binh Long and northern Phuoc Long Provinces, have long been camping grounds for regular North Vietnamese army (NVA) units. Throughout 1969 and early 1970, the Blackhorse en-

“Winter-spring operations in 1969-70 were aimed at holding NVA units across the border, interdicting their lines of supply and infiltration into South Vietnam, helping train a strong regional and popular force structure in the south, and continuing to aid the Vietnamese in eliminating the NVA’s infrastructure.”



countered most of the 7th NVA, as well as the 5th and 9th Viet Cong Divisions. Local forces in South Vietnam declined in strength, and by summer 1970, they were capable of no more than harassment and occasional attacks by fire.

Allied operations in that area (through September 1969) could be called the "Battle for Binh Long." Once one of the rich rubber producing areas of the world, Binh Long Province had long been infested with a large number of local and regular NVA forces. At least twice during 1969, the enemy attempted to gain control of the province, attacking the population centers — especially the province capital at An Loc. In the process, Leach sustained heavy casualties and consumed most of his supplies cached along the border in Cambodia.

By late fall 1969, NVA units had been driven into Cambodia where they remained in the sanctuary to refit, receive replacement personnel from North Vietnam, and pre-stock supplies for operations in the spring and summer of 1970. By early December, when Colonel Leach left command, he and the Blackhorse had participated in a highly successful campaign to rid Binh Long and northern Phuoc Long of regular NVA units.

Winter-spring operations in 1969-70 were aimed at holding NVA units across the border, interdicting their lines of supply and infiltration into South Vietnam, helping train a strong regional and popular force structure in the south, and continuing to aid the Vietnamese in eliminating the NVA's infrastructure.

Then, on 1 May 1970, the Blackhorse led the attack into Cambodia, and for 2 months, destroyed enemy cache and base systems, and dispersed or eliminated enemy units in the transborder bases.

Four operational features characterized Blackhorse activities from December 1969 through April 1970:

- They were mostly border operations, conducted on extended frontages to reduce infiltration of enemy personnel and supplies from Cambodia into South Vietnam.
- Most of these operations encountered regular NVA units since enemy local forces were heavily eroded in strength. As RVN regional and popular forces gained in strength and proficiency, gradually they were able to assume most of the burden of population security and keep the few area Viet Cong tied up.
- They made extensive use of land-clearing operations as a means of opening base areas, cutting across infiltration trail networks and providing areas of lateral access for rapid movement of cavalry through the jungle.
- They made extensive use of integrated intelligence, reconnaissance, and surveillance operations, augmented by manned and unmanned trail ambush systems, to gather information, interdict enemy movement, and defeat the enemy land-mine threat, which was his most effective weapon against armor.

In May-June 1970, the regiment entered Cambodia with other allied forces to search out and destroy enemy units and base areas.

During the autumn of 1969, the 5th VC and 7th NVA Divisions began a prolonged harassment of Bo Duc, capital of the northern district of Phuoc Long Province. Against the possibility of another Duc Lap, two troops of the Blackhorse were airlifted by C130 into nearby Bu Dop in late November. In early December, the 2d Squadron began operations along Highway 14A, from Loc Ninh in northern Binh Long to Bo Duc, to link up with the two airlifted troops and other U.S. and

ARVN units defending the area. In addition, the 2d Squadron was to interdict the Serges Jungle Highway, a main NVA supply route from Cambodia south to the Song Be River. Squadron operations included extensive land clearing of an access corridor for quick relief of the Bo Duc garrison by armored cavalry.

In addition to his squadron, from which F Troop had been airlifted into Bu Dop, Lieutenant Colonel Grail Brookshire's 2d Squadron had attached to it an engineer land-clearing company, two rifle companies from battalions of the 1st Cavalry Division (AM), and two platoons and company headquarters of the 919th Engineers — the Blackhorse's own engineer company. With cavalry and infantry protection, the engineers pushed the Rome plows through the jungle, opening a 400-meter wide cut, generally along the trace of Highway 14A, to permit rapid movement of mechanized forces and facilitate airlanding of infantry. At the same time, the 2d Squadron began to interdict the Serges Jungle Highway. For about a week, the enemy rear service group, operating the Serges Jungle Highway, defended their lines of communications, then withdrew, leaving the trails dry, and concentrated on an extensive anti-vehicular mine program against the 2d Squadron.

The mine campaign represented an insidious and difficult threat; the Rome plow cut generally paralleled the border, making it possible for mining parties, under cover of darkness, to easily cross the border, plant their mines, and be gone in a few hours. Extraordinary countermeasure measures were called for; additional mine detectors were procured and put into service, enabling the 2d Squadron to find about four out of every five mines encountered. Recognizing that the best way to defeat mining is to eliminate either the source of the mines or those who plant the mines, Brookshire's troops began an intensive intelligence and surveillance program to detect the mine-laying parties and eliminate the mine layers. Gradually, these efforts bore fruit in reduced mining incidents; however, it was not until May 1970 that it was possible to get at the source of the mines. In that month, Colonel Ma Sanh Nhon's 9th ARVN Regiment entered Cambodia, and at the head of the Serges Jungle Highway, captured more than 200 cached mines — the source of Colonel Brookshire's troubles 6 months before and a continuing problem in the intervening months.

At the beginning of 1970, with his lines of communications shut off, his trail systems heavily interdicted, and his mine-laying parties under constant attack, the enemy began to cross the border in battalion strength to ambush friendly units, hoping to destroy a small unit in an ambush before help could arrive. The Battle of the Crescent was typical of these efforts, and is worth recounting briefly since it highlights many characteristics of both antagonists.

Early morning on 20 January 1970, NVA gunners opened fire on the 2d Squadron command post near Bo Duc. By mid-morning more than 100 rounds of mixed mortar fire, up to 122mm in caliber, had fallen in and around Colonel Brookshire's command post, howitzer battery, and tank company laager. The first rounds brought immediate and violent counter-battery fire from the 2d Squadron. A Cobra light observation helicopter (LOH) team already on station swung over to find the mortars, while H Company and one cavalry troop started toward the position. Within minutes, the LOH's observer located the mortars. Major Fred Franks, the squadron S3, now airborne, began to work the position over with artillery. Tactical air and aerial rocket artillery were both on the way.

While fire support poured in on the mortar positions, the LOH was shot down in a crescent-shaped open area in the jun-

gle near the Cambodian border. This disclosed the main enemy fighting position — a classic landing zone ambush with six .51-caliber antiaircraft guns, mortars, rocket launcher teams, and an estimated two battalions of infantry.

Major Franks shifted artillery into the area immediately and diverted a light fire team to cover a daring rescue of the downed LOH pilot by his covering Cobra, piloted by Captain Carl Marshall. Captain Marshall landed his Cobra amid intense enemy fire, after working over the enemy gun positions with his own ordnance, picked up the injured LOH pilot by dragging him in the front cockpit of the Cobra so that he lay across the gunner's lap, half in and half out of the open canopy, and took off in a hail of hostile fire.

Then, the 2d Squadron bore down on the enemy. H Company moved north and west to get between the dug-in NVA and the border. Two troops of cavalry moved through the jungle to close with the enemy from the south and east. While the ground troops maneuvered, Colonel Brookshire kept fire on enemy positions. Sixteen air strikes, more than 20 Cobra loads of ordnance, and more than 600 rounds of 155mm artillery were delivered before the fight was over. Two troops of cavalry broke into the open on the south side of the crescent and charged the enemy positions to their north with all guns blazing. By this time, it was late afternoon and the fight had been knocked out of the 209th NVA Regiment in the crescent. Survivors broke and fled into the jungle toward Cambodia, covered by the lowering darkness.

Several features of this action characterize Blackhorse border operations during this period:

- The enemy generally consisted of regular NVA forces, which fought as units and enjoyed the same problems with fire support and maneuver coordination as any regular force. Their positions were always dug in, weapons were well-sighted and communications, including field wire, were in place before they attempted to fight. In the Crescent battle, field wire was even found in front of enemy positions along the north edge of the crescent.

- NVA commanders were creatures of habit and frequently returned to the scene of a previous fight and set up to fight again — even to the extent of using old bunkers and trench lines.

- Fighting this type of enemy called for techniques modified from those used in fighting smaller, more widely dispersed local guerrillas. The Patton “pile on” dictum still applied; however, initial reconnaissance operations had to be conducted in at least platoon strength — lest a small unit take unnecessary losses at the hands of a superior force in a well-organized position before help could arrive.

- Proximity to the border made it imperative that the cavalry close with and hold the enemy, lest he escape into the sanctuary. The organic firepower of armored cavalry makes it an ideal force for this type action.

- Supporting fires had to be applied in the appropriate volume at the proper places, then maneuvered about to pace the battle. The ideal situation is to turn everything on when the fight starts — artillery, air, gunships, and maneuver forces — and never turn anything off, but control the battle by varying intensity and place of application of all the resources brought to bear.





"Fortunately, it had become the practice in the Blackhorse to dig in, not a popular procedure with armored cavalry, but a requisite to survival in this environment. Ammunition, aid stations, and personnel shelters were all bunkered in; a perimeter berm added shelter and individual vehicles were dug in as time permitted. The practice paid off. Fort Defiance, on one occasion, survived a 100-round mortar-rocket attack, coordinated with a ground attack by a battalion of the 165th Regiment, with only two friendly casualties."

So successful was the 2d Squadron's Bo Duc operation that it was decided to carve up War Zone "C" with an extensive series of Rome plow cuts using two squadrons of cavalry and two Rome plow companies. In February, the 1st Squadron, commanded by Lieutenant Colonel Jim Reed, moved to Tay Ninh, picked up an engineer land-clearing company and commenced operations north toward the Cambodian border. Once along the border, Colonel Reed turned his forces east and moved to link up with the 2d Squadron, which had begun to cut west out of Binh Long Province along the trace of Highway 246. By mid-March, both squadrons had made extensive cuts into enemy trail networks in northern War Zone "C:" the 1st Squadron across the Mustang Trail; the 2d Squadron across the trail systems leading from Cambodia to the Saigon River Corridor.

Based on the 2d Squadron's experience in the Bo Duc operation, tactics and techniques for border interdiction had been fully developed. It was apparent that to defeat the NVA at its own game, one had to make systematic and imaginative use of all resources — especially reconnaissance, intelligence, and surveillance means — and all of these had to be tied into an integrated plan. On the Bo Duc road, Brookshire's troops had developed an effective ambush system using claymores and other devices in manned and unmanned ambushes (*ARMOR*, November-December 1970). The system continued to develop and saw full utilization for the first time in War Zone "C" during March and April.

Rome plow operations in War Zone "C" included major east-west cuts along the general trace of Highway 246, and along major north-south secondary roads. Tactical cuts 100 to 200 meters in width were made along and across enemy trail networks. In addition, base areas were thoroughly plowed out, forcing the enemy to abandon the base. In March, the 165th NVA Regiment was interrupted in the construction of their new "Kennedy Base" in northern War Zone "C" and driven back into Cambodia.

From his command post at Fort Defiance, the highest peak (95 meters) in War Zone "C," Colonel Brookshire directed the 2d Squadron to conduct border interdiction operations, while on his left, Colonel Jim Reed's 1st Squadron extended the system to the west. By the end of April, these two squadrons had accounted for more than 200 enemy forces killed in the ambush systems along the trails. During the same period, several hundred other enemy soldiers were killed in firefights in the area as the 7th NVA Division fought to reestablish its infiltration system. So great was the enemy's concern over the pres-

ence of the 1st and 2d Squadrons in War Zone "C" that he eventually moved two regiments, the 165th and 209th NVA, around the flanks of the ambush system to attack Colonels Brookshire and Reed from the rear.

In April, these units were joined by an antiaircraft regiment whose mission was to force up off the trails the intensive reconnaissance effort of the Blackhorse air cavalry troop. Ground-to-air firing incidents increased to several per day in April. Major Don Smart, the air cavalry troop commander, found himself inadvertently on the ground more than half a dozen times during the month. In addition, troop laagers, especially command post laagers, were heavily targeted. Fort Defiance, the 2d Squadron command post, was the objective of several violent attacks. Fortunately, it had become the practice in the Blackhorse to dig in, not a popular procedure with armored cavalry, but a requisite to survival in this environment. Ammunition, aid stations, and personnel shelters were all bunkered in; a perimeter berm added shelter and individual vehicles were dug in as time permitted. The practice paid off. Fort Defiance, on one occasion, survived a 100-round mortar-rocket attack, coordinated with a ground attack by a battalion of the 165th Regiment, with only two friendly casualties.

While all indicators lead to a conclusion that the interdiction effort was a success, the full measure of success was not apparent until the Cambodian operation. In May, when the Blackhorse uncovered the cache systems in the Fishhook, extensive stores of food and ammunition were found above ground in temporary storage. Prisoners related that the supplies had not been stored underground because they were scheduled for immediate movement to the south, but had not been moved due to the tight control the 1st and 2d Squadrons exercised over the trail system south of the border.

The lessons of these operations confirmed those alluded to before, and added to the conviction that armored cavalry could master the enemy infiltration system with intense use of an integrated intelligence, surveillance, and reconnaissance effort to develop fully the trail system and imaginative use of an extensive ambush system as the basis around which other operations might be conducted.

While the 1st and 2d Squadrons were working over the 7th NVA Division in War Zone "C," the 3d Squadron, with elements of the 1st Cavalry Division (AM), was in Binh Long Province, providing convoy security and escort, and operating along the northern province border in locations vacated by the other two squadrons. The 7th NVA Division continued to try to move elements into the populated areas of Binh Long, de-

spite the fact that most of the division was fully occupied in War Zone "C." Typical of these actions was a fight between L Troop and a battalion of the 209th NVA Regiment on 10 March.

Binh Long's rubber plantations were no more than a night's march from the Cambodian border. Hence, when he chose to do so, the enemy could move at dusk, avoiding the last light air cavalry visual reconnaissance and be in position in the rubber before the first light visual reconnaissance. From there, he could attack towns and villages in the rubber plantations, including the district and province capitals of Loc Ninh and An Loc.

On the afternoon of 9 March, Captain John Caldwell's L Troop set out unmanned automatic ambushes across the trail systems to their west and laagered near the edge of the rubber plantations west of Loc Ninh. During the night, an unmanned ambush detonated. Troop L responded with mortars and artillery; at first light, a check of the area yielded several enemy bodies and considerable equipment, indicating that a larger party had been involved. Captain Caldwell took one platoon and backtracked the enemy trail that lead into the ambush. A second platoon, which had dismounted to search the ambush area, returned to its armored cavalry assault vehicles (ACAVs) herringboned along the edge of the rubber plantations. Before mounting up, the platoon began a search of the nearby rubber plantation to determine if survivors of the ambush had taken up positions. As the dismount party entered the rubber plantation, the enemy opened fire from positions in an old bunker trench line. The dismounted party hit the ground and returned

fire from a drainage ditch, while the platoon's ACAVs returned fire over their heads.

The third platoon, hearing the firing, came on the run, closed on a small knoll behind the enemy and cut down would-be escapees as they ran over the knoll to the rear. The squadron commander, Lieutenant Colonel George Hoffmaster, brought in artillery and gunships as Captain Caldwell returned fire, and L Troop, in a coordinated attack, finished off the boxed-in enemy. The 209th NVA Regiment left more than 50 dead on the field, along with some wounded. Several rubber workers, who the NVA had forced into the bunker line to avoid their alerting L Troop, were freed and their wounds treated.

The enemy's behavior underscored his propensity for coming back to the same place to fight over and over again. Also of note is the fact that in this area, he habitually chose to fight armored cavalry in the rubber, where his losses were enormous (about 40 to 1) compared to fights in the jungle where he had the advantage of being more a creature of the environment than the cavalry.

One other feature of this battle that deserves emphasis is the fact that no one in the dismount party was injured by friendly fire, although a heavy volume of automatic weapons fire was directed at the enemy over their heads. For months, the 3d Squadron had concentrated on training battle drills, to include aimed fire and fire discipline. Developed by the squadron commander, Lieutenant Colonel David Doyle, in the fall of 1969, these important features of cavalry operations were continued by his successor Colonel Hoffmaster. In this fight, they paid big dividends, driving home the fact that even in combat, units must



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have some training programs designed to sharpen basic combat skills.

The actions described in this article typify regimental operations from late 1969 to the end of April 1970. The combination of armored cavalry and Rome plows kept main enemy forces at bay in the sanctuary. All that remained to be done was to enter the sanctuary and destroy bases, supplies, rear service elements, and the main units stationed there. Until about 28 April, the idea of an attack into Cambodia was just that — a good idea. However, by nightfall of 1 May, it was no longer a matter of wishful thinking.

Two squadrons, in the midst of the most extensive collection of rice and equipment anyone could remember, were there; and after a day of continual fighting, were in contact with large enemy forces. The Fishhook was to the NVA 7th Division what any large logistics complex is to U.S. forces — supplies of all kinds waiting transshipment to the south, hospitals (with x-ray equipment), laundries, clothing and equipment repair facilities, bicycle assembly, and repair shops. North of the Fishhook were division-sized training and rest areas to house NVA units moving in and out of South Vietnam. Except for some dependent housing (with television), the North Vietnamese lived in Cambodia much as they did in South Vietnam — underground and hidden away in the jungle. Hence, there was still the problem of following the trails, finding the base areas and rooting defenders or survivors out of hiding.

By the afternoon of D+2, the 2d and 3d Squadrons had linked up with ARVN airborne division elements, which had conducted airmobile assaults into positions about 20 kilometers deep into the Fishhook to secure key points to the enemy rear. On D+3, the order went out to continue the attack to seize Snuol, the center of a large rubber plantation about 40 kilometers north of the Fishhook. En route, Blackhorse squadrons linked up with two battalions of U.S. airmobile infantry, which were in the process of searching out large cache sites.

On D+5, the lead squadron negotiated three blown bridges left by the enemy. By the afternoon of D+5, Colonel Brookshire was on the outskirts of Snuol with lead elements of the 2d Squadron, followed closely by Lieutenant Colonel Bob Griffin's 3d Squadron. After several days of fighting around Snuol, Brookshire and Griffin were joined by Lieutenant Colonel Jim Reed and his 1st Squadron. Then the regiment concentrated on a detailed search of enemy base areas, cache sites, and elimina-

tion of enemy units remaining in the area. Details of the entire operation are being prepared by the regimental historian and should appear in these pages in the near future. However, one comment is in order here:

It has been said that the Vietnam War has made standard military operational methods obsolete and that new planning methods and new tactics are required. While this may be true to some extent, it is instructive to note that in the first 7 days of May, the Blackhorse attacked (from an attack position), crossed a line of departure, proceeded on an axis of advance, linked up with ARVN airmobile infantry, conducted a passage of lines, continued to attack on axes, linked up with U.S. airmobile infantry, conducted another passage of lines, seized a heavily defended objective, and exploited the success by mopping up in the enemy rear. It was noted with considerable relief that no one had forgotten the fundamentals.

The Blackhorse Regiment is a unique institution — it does everything well. From vehicle maintenance to operations, it exceeds every expectation. Professionalism in all ranks is its hallmark. Its soldiers bear our country's arms with honor and dignity, despite the difficult tenor of the times. Its fighting record is well known. Strong ties of friendship and professional allegiance bind it to our gallant Vietnamese allies. In all these endeavors, the Blackhorse record is unblemished, unexcelled, and unequalled — it reflects the sacrifice of all those of all ranks who have served, who have, whatever the difficulties, done their duty well. No country in history has ever been served so ably by such gallant and dedicated men.



Donn A. Starry is a retired four star general. He is a graduate of the U.S. Military Academy, U.S. Army Command and General Staff College, Armed Forces Staff College, and Army War College. His early career includes command and staff positions in the United States, Europe, and Korea, to include commander, 1st Medium Tank Battalion, 32d Armor, Federal Republic of Germany; commander, 11th Armored Cavalry Regiment during the Vietnam War; commanding general, U.S. Army Armor Center and School; commander, V Corps in the Federal Republic of Germany; and commander, U.S. Army Training and Doctrine Command, where he formulated AirLand Battle doctrine, which prepared the Army for warfighting into the 21st century. Starry concluded his career as commander in chief, U.S. Readiness Command, retiring from the Army in 1983; however, his association with the Army and his involvement in national defense policy continued as he served on the Defense Science Board and several other organizations.



CECIL'S RIDE

A Tank Platoon Leader in Desert Storm

by Captain David Norton

(Reprinted from the November-December 1999 *ARMOR*)



After an extended delay caused by a maintenance problem, we were finally ready to continue our journey. The pilot pulled the 747 to the end of the runway and stopped. Over the intercom, he said there was something he wanted us to hear.

He switched the radio over on the intercom and the main body of the 1st Battalion, 34th Armor sat on the runway at New York's Kennedy Airport and listened as the ball dropped in Times Square. Never before, and never again, will the New Year carry such a vivid memory as that night. The men who would control the combat power of an M1A1 tank battalion sat in total silence. Thoughts of family, friends, home, and happier times mixed with fear, doubt, and anxiety about what lay ahead. As the cheers of the New Year's crowd swelled on the intercom, the engines' whine increased and the plane moved slowly forward. The 1st Battalion, 34th Armor was going to war.

After the long, long flight to Saudi Arabia, we stepped off the plane, greeted by a cool breeze and a darkened airfield. I don't know what I expected, but the emptiness just seemed to engulf us as we formed up. It was probably less than a quarter of a mile, but the walk to the point where we would meet the buses seemed much longer. When we reached the bus pick-up point, we were given bottled water and told to start drinking. When we finally boarded the buses to the warehouse that would be our home for the next 2 weeks, most of us were sorry we had consumed so much water. We arrived at the warehouses at around 0230 hours, and by the time we had our bags separated, it was 0330 hours. We couldn't get an area until around 0600 hours, so we simply

dropped our bags and lay down on the cement to get some sleep.

Rumors were the order of the day for the next week. We didn't know when we would move, where we would move, or if we would use our M1 tanks or draw M1A1s. Finally on 10 January, we learned that we would turn in our M1s and draw M1A1s sent from stocks in Europe. For the next 3 days, Charlie Company turned in M1 tanks and drew and prepared M1A1 tanks for combat. The tanks we drew were not new and our last tank was late getting on a truck due to a maintenance problem, but in spite of the problems and the rush, Charlie Company had its tanks loaded and moved north on the 14th.

I had never experienced anything similar to our deployment into the desert. The company was loaded on two buses, which followed the trucks carrying our tanks. Prior to leaving the port, the company commander had called all the platoon leaders together and updated us on the situation. Intelligence was predicting the Iraqis would attack on the night of the 14th. This was based on the 15 January deadline imposed by President Bush. So, as we rolled off to face the enemy, we were riding on buses and only the platoon leaders had any ammunition. Needless to say, this is not the picture a tanker normally imagines when he thinks of going to war.

When we climbed off the buses on the morning of the 15th, we found ourselves on the flattest piece of earth I have ever seen. Most of our tanks and the M998s with the commander, first sergeant, and support personnel had arrived ahead of us. When I went to find my tank, I was in

for some bad news. The driver off-loading the tank was not used to driving in sand, and he turned too sharply, throwing a track. As we worked to get this problem corrected, the truck carrying my wing tank pulled in. Unbelievably, this truck had side-swiped another, which was also carrying a tank. Only the front left side of each tank made contact, but this tore the number one and number two skirts off, crushed six track blocks, and dented the bustle rack and sponson box. After replacing the bad track blocks, the tank was able to move under its own power and operate normally.

We finally got all our personnel and equipment together, and word came down for us to pull through a logistics site to get fuel and ammunition. As we were moving through the logistics site, the first sergeant (1SG) came and found me. He told me that due to the classified nature of the armor in the skirts of the M1A1 tank, we would have to retrace our route and try to find my wing tank's missing skirts. Four or five hours later, after searching up and down the main supply route, we received word that the skirts had been picked up by another unit. By the time we made it back to the company, it was dark, and we had no reference to guide on. Somehow, we found the company, and I returned to my platoon. As a new platoon leader with only 3 months in the company, my first day in the desert had not exactly been a rousing success.

January 16th was a better day. We organized our tanks, secured our gear, and prepared our weapons for combat. We also drew a mine plow per platoon and one of the tanks in 1st platoon was fitted with a mine roller kit.



Nothing exciting happened until I was awakened at 0330 hours on the morning of the 17th. We were told to go to RED-CON one and stand by. At 0400 hours, we began to see flashes to the north as Operation Desert Shield turned into Operation Desert Storm. I remember having my gunner and driver pop their heads out of the tank and look north. As we sat and watched the explosions flash across the sky, I told my crew they were watching the start of a war.

The next 6 weeks were filled with fear, anxiety, and extreme boredom as we waited to see if a ground war would be necessary. The days turned to weeks, and then we learned that if a ground war came, our parent unit, the 1st Infantry Division (Big Red One) would be the breach force for VII Corps. In preparation for a ground war, we moved to a firing range and tested all our weapons systems. After ensuring that all our systems were functioning properly, we started a series of rehearsals. Beginning at the platoon level, the rehearsals grew in size and scope. The final rehearsal was the movement of VII Corps to its attack position.

We also conducted leaders' recons into the neutral zone that separated Iraq and

Saudi Arabia. These recons gave us a good feel for what we would see when we moved into the attack. I can't imagine a force ever being better equipped or better prepared than we were.

When I talk to people who weren't there, I hear how Desert Storm was such an easy war. Sometimes, I even feel that way when I look back at how things turned out, but sitting in the desert waiting, I sure didn't feel that way. As we prepared for our mission, we were told that as the breach force, the Big Red One could expect 10 percent killed in action (KIA) and 30 percent wounded in action (WIA). As a tank platoon leader, that equals four or five soldiers and at least one tank lost. When you look at numbers and turn them into names and faces of men that you are responsible for, easy is not the word that comes to mind.

On the morning of 24 February, I climbed out of my sleeping bag and secured my gear, knowing that in a few hours we would begin our attack north. I went from tank to tank in the platoon to ensure each crew and vehicle was ready to go. As I checked my tanks, I found a stenciled picture of "Cecil," the cigar-smoking rabbit, on the front slope of each turret. I soon

learned that Cecil was the combined work of all the junior enlisted members of the platoon. Prior to our arrival in Saudi, 2d platoon had been looked upon as a bunch of troublemakers. Cecil was a sign that this group, ranging in age from 19 to 46, had finally pulled together. I was proud to carry Cecil's image on my tank as we moved off to face the Iraqis.

With every weapon checked, every bustle rack secure, and every crewmember in his place, we waited for the order to move. Finally the company radio net came to life, "short count follows 5, 4, 3, 2, 1," as the number one rang out, 14 radios were switched off and the sound of 14 M1A1 tank engines filled the desert air. A minute later, the company commander was back on the radio and we began our move. We were the right side of the company wedge formation, and waited for 3d platoon to move so we could form up on their flank. When the time came for us to move, I keyed the intercom and told the driver to move out. Instead of hearing the engine gain power and feeling the tank move, I heard the driver yelling, "Sir, it won't move!" There we sat as the rest of the company moved around us. I was frantic; I called for the maintenance team and the entire crew began to trou-



bleshoot the problem. Five minutes later, we were screaming across the desert as fast as we could go, to regain our place in formation. My driver, who was tall and slender, had accidentally bumped the throttle cable when he climbed into his seat, jarring it loose. This simple and un-

When we moved past the field artillery, I knew we were getting close. Shortly after passing the artillery, we stopped. We were waiting on orders to continue or if we had to wait until the following morning. While we waited, contact reports began to come across the radio. The first

Battalion, 34th Armor (2-34 Armor). The 1st Battalion, 34th Armor (1-34 Armor), as a tank-pure battalion, would move through these lanes, destroy enemy second-echelon forces, block any enemy counterattack, and open the way for follow-on divisions to pass through. Once in position, we watched as truckloads of Iraqi prisoners of war moved past us to the rear. More concerned with what was going on to my front, I didn't really notice the battery of 8-inch guns that set up a couple hundred meters behind me. This quickly changed when the first volley of the prep fire exploded over our heads. I nearly had to change my pants. Watching and listening to the size and violence of the prep fire, I closed my eyes and thanked God that we were not the ones on the receiving end.

Even before the last rounds impacted, the lead elements moved forward. I have to admit that after watching the prep fire, having 60 tons of steel wrapped around me, gave me a real safe feeling. On the other hand, I began to think of the men who would have to dismount and clear the battle-hardened Iraqis from their trenches. To everyone's surprise, word that the trenches were clear and the lanes were open came quickly from the breach task

As I checked my tanks, I found a stenciled picture of "Cecil," the cigar-smoking rabbit, on the front slope of each turret. I soon learned that Cecil was the combined work of all the junior enlisted members of the platoon.

foreseen problem was in some ways a sign of things to come.

I can't describe the feeling that ran through me as we moved north. We passed units of all types, and everyone must have been out to watch us pass. Each unit we passed greeted us with waves, cheers, and shouts of encouragement. Knowing that we had the support of our families, the American public, and the rest of our comrades in arms was a great feeling.

report was that enemy attack helicopters were spotted moving in our direction. This report was followed by a report that the unit to our right was under chemical attack. These reports all proved to be false, but they did help keep us alert while we waited. Finally, orders came down to continue the attack.

The battalion shifted forward and left to get lined up on the lanes that would be cut by Task Force 5th Battalion, 16th Infantry (5-16 Infantry) and Task Force 2d

forces. We moved forward, and as we neared the breach lanes, I was glad that we were not facing serious resistance. Dust and smoke made visibility a real problem, which was compounded by the large number of vehicles in such a small area. Several vehicles nearly collided as we moved through the lanes with everyone trying to maintain position in line.

The training and rehearsals paid off as the battalion quickly moved into a diamond formation after exiting the lanes. Buoyed by the limited resistance during the breach, we moved forward with careful confidence. Leading the task force, the scout platoon and Charlie Company were first to make contact with the enemy. Hot spots began to appear in our sights at ranges in excess of 3,000 meters. Unable to positively identify what was out there, we continued to move. We stayed under very tight fire control, and no one was given permission to engage until we identified the hot spots as towed guns and wheeled support vehicles. The guns and some of the support vehicles were destroyed with main gun rounds as we continued to move forward. These guns were anti-aircraft guns, and were part of an enemy trench and bunker system. We rolled right over the top of the bunker system using machine guns to suppress suspected enemy positions as we moved.

We didn't see any Iraqi soldiers around the equipment or in the first set of bunkers as we passed. It wasn't until we crested a small ridge at the rear of the bunker complex that we began to pick up movement in the distance. Approximately 2,000 meters to our front was a second bunker complex. Through our thermal sights we could now see soldiers moving in these distant trenches. The turret distribution valve went out on my tank at the same time we first identified what appeared to be the main bunker in the complex ahead. No longer able to traverse my turret quickly, I told my driver to pick up a tight weave. This made it possible for us to scan our sector and enabled me to control the platoon. My three tanks had also identified the large bunker to our front, and after clearing fires, I told my gunner to hit it with a high-explosive antitank (HEAT) round.

The impact of the HEAT round and the Iraqi reaction were simultaneous. Before the dust had even cleared, a sea of white flags went up throughout the enemy position. The battle area that just seconds before was filled with machine gun fire and the crash of tank main guns grew deathly quiet. We pulled into an overwatch position as the scouts, assisted by the engineers, rounded up enemy prisoners of

war. We soon learned that we had captured an Iraqi infantry brigade, including the commander and staff. Information that the Iraqis had no idea who was to their front filtered back to us; they expected to see an Arab force comprised primarily of infantry. The sight of 58 M1A1 tanks was devastating and they lost all their will to fight as soon as that tank main gun round impacted their bunker.

Day quickly turned to night as the last enemy prisoners were gathered up and the command bunker cleared. With the day's objectives secured and the battalion arrayed to defeat an enemy counterattack if it came, we stopped for the night. As soon as we got word to stop for the night, soldiers began to clear the area around their tanks. Knowing that tankers are not really trained or equipped to clear bunkers, and with all the unexploded artillery bomblets in the area, the battalion commander ordered everyone back on their tanks. We had come too far to get someone hurt or killed needlessly.

The adrenaline that pumped through our veins during the day began to slowly leave our systems. Soldiers began to wind down, and as soon as we established security, we rotated guards so soldiers could get some rest. I was still too wound-up to rest, so I teamed with my loader to take the first watch, allowing my gunner and driver to get some sleep. Near the end of our watch, Alpha Company, to our right, reported three Iraqi dismounts moving across their front. They were told to continue to observe, but not to engage unless necessary. A short time later, my three tank reported that the dismounts had moved into his sector. Tired of manually traversing my turret, I decided to use my tank to watch the Iraqis, which left my three good tanks free to scan our sector.

Time passed slowly as I continued to track the Iraqis, who were moving from right to left across our sector. Watching them, I noticed that one of them was carrying something over his shoulder, but I could not make out what it was. I became concerned as they moved between our scouts and us. Each time they came near a Bradley, they would stop, drop to their knees and face the Bradley. I could see well enough to know that they never pointed any type of weapon at the scouts, but I wasn't sure of what they were up to. After a minute or so, they would get back up and continue on their way. Once they crossed in front of my tank, the battalion commander, who was about 100 meters to my left rear, decided they had gone far enough. He ordered the scouts to button up and then had his gunner fire a burst of coax a safe distance in front of the Iraqis.

The Iraqis dropped to the ground and didn't move. Several minutes later, they got back to their feet and continued to move. This time, the battalion commander told his gunner to fire a little bit closer. Once again, the Iraqis dropped and didn't move for what seemed like a very long time.

I was surprised when I again heard the rattle of machine gun fire. I called on the radio to ask the executive officer what was going on. Apparently, the battalion commander's gunner had seen the Iraqis start to crawl toward the scout vehicles and awakened the commander. The commander, concerned for the scouts' safety, told his gunner to fire a burst at the Iraqis. I stayed awake all night, keeping an eye on the three forms on the ground 800 meters to my front.

At the first light of morning, two of the three Iraqis got up and with hands raised, began to walk toward our position. They came up between my tank and my wingman. While we covered them from my tank, my wingman checked them for weapons. They said that their friend had been wounded and needed a medic. Not wanting to send a medic out alone, my commander told me to move out and secure the area. When we neared the Iraqi, I knew he was dead. We were told to search him for documents, identification, and any personal property that his family might want returned. We were then told to bury the remains and mark the site for future recovery. When we finished, we moved out of the area.

I honestly don't know how far we moved or where we ended up. We were off the maps that we had and the entire company was relying on the company executive officer, who had a global positioning system (GPS) and one large-scale map. When we stopped, we pulled into a blocking position and received word that follow-on divisions were passing forward. The Big Red One had successfully completed its mission and would now become the corps reserve. We completed resupply and maintenance checks and once again moved out, only this time we were following VII Corps. Even as the reserve, we maintained our battalion diamond formation and never let our guard down as we moved across the desert.

On the afternoon of the 26th, we began to receive reports that the 2d Armored Cavalry Regiment (ACR) was in contact with an armored division of the Republican Guard. Unknown to any of us, someone at an extremely high level decided to move the Big Red One forward to destroy the Tawalkana Division of the Republican Guard in a night attack. Unaware of

what was going on, we were relieved and happy when we stopped to refuel just before dark. After hours of riding through wind-blown sand and dust, any rest was welcome. Not until later, when we were once again on the move, did the company commander come up on the radio and tell the platoon leaders to go green. Riding through the night with the wind in my face and the sand in my eyes, I learned of what was to come.

I don't remember being afraid when we went through the breach on the first day of the war. I was excited, nervous, and anxious, but I don't remember any real fear. That changed as I listened to what the company commander had to say; not only were we going to conduct a forward passage of lines with a unit in contact, but we would be doing it from the march and at night. When we exited the passage lanes, we would face a Republican Guard Division equipped with T72M1 tanks, dug in and waiting.

Fanning the flames of doubt and fear was a briefing the company had received prior to deployment. The briefers told us all about the T72M1 and that it was a great tank, almost as good as the M1. We were going to conduct one of the most dangerous maneuvers possible against a well-equipped and prepared enemy and I couldn't even brief my platoon properly. The shortage of secure communications equipment made it impossible for everyone to have a secure system in their tank. So over an unsecured radio net, I became very creative in letting my platoon know what was happening.

Unbelievably, the passage of lines went smoothly. We simply used battle drills to move through the lanes and redeploy on the far side. The fact that it went smoothly didn't make it any less exciting. We flowed through the lanes as artillery fired overhead, and the horizon was dotted with burning Iraqi combat vehicles. Soldiers, who just moments before were dead tired and dragging, came to life as the adrenaline of combat once again began to flow. We used the burning vehicles to guide on, and as I passed a burning Iraqi tank, we were told that we no longer had friendly forces to the front.

The 2d ACR had destroyed everything in range of their weapons, allowing us to fully deploy before we made contact. We began to pick up vehicle movement to our front as we moved in front of the 2d ACR. The scout platoon, approximately 1,000 meters to my front, was using 25mm and machine guns to recon by fire. They were firing at bunkers and unidentified hot spots. Suddenly, a SABOT round hit the Bradley to my left front. We weren't sure

who fired at the scouts, but we did know that it came from the direction of friendly forces. The scout platoon leader, not knowing where the round came from, moved his vehicle to support his damaged track. His vehicle was also engaged as it moved into position.

The battalion commander quickly moved Bravo Company forward to secure the area so the medics could treat the injured. He then moved the remaining four scout tracks back, and Charlie Company moved out to lead the attack. With no one to our front, we began to engage targets at ranges of 3,000-3,500 meters. We were not going to take the chance of getting too close and giving the enemy a chance to fight back. Riding up in an open hatch, I used AN-PVS-7B night vision goggles to keep track of our place in formation. I only dropped into the turret to look through the sight to identify long-range targets. After destroying several vehicles, to include at least one tank and some armored personnel carriers, we began to see numerous trucks and trailers. I told my guys not to fire unless they identified a combat vehicle or an enemy fighting position.

We identified a large logistics site and were soon moving through a corps-level supply area. Along with all the trucks and trailers were a large number of enemy dismounts. We also skirted a large fenced-in area that turned out to be a major ammunition holding area. Most of the dismounts we came across didn't want any part of a fight, so they simply dropped their weapons and we sent them to the rear. My platoon sergeant's wingman reported eleven dismounts 3,000 meters to his front. I told him to keep an eye on them, but continue moving. A few minutes later, he reported that the dismounts had taken up position in a bomb crater. I told him to watch them, and if they did anything stupid, we would deal with them when we were within machine-gun range.

The company's direction of travel put the Iraqi position directly in front of my tank. We kept them under continuous observation, and they didn't move or take any hostile action as we approached. When we were close enough and they got a good look at our tanks, they began to stand and drop their weapons. I pulled my tank up beside their position and yelled for them to leave their weapons and move west. Most of them started to move, but just at that moment, my loader and I noticed two guys with machine guns trying to sneak around a berm. Knowing that we couldn't traverse fast enough, I screamed at my driver to back up, right track! The engine roared, the dust flew and a squad of drop-jawed Iraqis found

themselves looking down the barrel of a 120mm smoothbore cannon. Mouths were open, hands flew up and a couple of them began to pray. I nearly came out of my turret yelling at them to drop their weapons. I can't begin to list or even remember the stream of profanity that came out of my mouth. All I remember is that I really didn't want to kill these guys just because of a couple of idiots. After a few seconds of yelling, I suddenly stopped and calmly asked if any of them understood English. One guy, who was white with fear, slowly raised his hand. I said "OK," and began screaming again. I told them that if they didn't all want to die, the guys with the machine guns better drop their weapons.

Paralyzed by fear and at the sight of a crazy American yelling at them from the top of a tank, it took the Iraqis a few seconds to react. Finally, one of the Iraqis near the last guy with a weapon reached over and knocked it out of his hands. Knowing that I was falling farther and farther behind the company, I was out of the turret and on my way down the front slope before the machine gun hit the ground. Without stopping to think, I found myself on the ground in the middle of a Republican Guard infantry squad. I realized as I collected weapons and sent the Iraqis marching west to be picked up by follow-on forces, that I was armed only with a 9mm pistol. In reality, I wasn't armed at all since my pistol was still holstered and I didn't even have a round in the chamber. Fortunately, I didn't need a weapon and my loader dismounted to assist in destroying the captured Iraqi weapons.

We smashed the Iraqi weapons between the track and the sprocket of the tank, ensuring they could not be used again. I scanned the area after remounting the tank and saw M1A1 tanks about 500 meters away. I told my driver to "kick it" so we could catch up quickly. When we were close enough to identify the tanks, I realized they belonged to Delta Company. Delta was at the rear of the task force diamond, meaning we would have to pass through the center of the task force formation to catch the company. I quickly called the company executive officer to have him notify the rest of the task force that our tank would be moving through the center of the diamond. I was worried that someone would see a lone tank out of formation and mistake us for the enemy. When I received word that it was clear, we moved as fast as possible to join the company.

We attacked through the night, stopping just before sunrise. I can't say exactly

when the passage of lines started, or exactly when we stopped, but I do know that the night of 26-27 February was the longest of my life. Morning held little change from days past. Fuel and ammunition came forward, allowing us to re-supply and do some very basic maintenance on our tanks. Later, with no sleep and only an MRE, we once again moved out in pursuit of the retreating Iraqi army. We moved all day and into the night. We passed through the worst tank country I've ever seen. The S3 called it "the valley of the boogers," some type of strip mine in the desert. As we started through it, we went to platoons in column, then companies in column, and then the entire task force was in a single column. We

He informed me that his gunner had spilled boiling coffee on himself. I grabbed my helmet, mask, and weapon, and went to check on the injured soldier. After being briefed by the combat lifesaver, I called to get a medic to evaluate the burn. The medic vehicle was up with the rest of the company and, due to the narrow road, couldn't get to us. Because of dismounts in the area, we didn't want the medic to cross the 100 meters to our position on foot. I told the commander to have the forward platoons hold their fire, so I could come get the medic. I started up the road to get the medic, and the injured soldier's tank commander joined me because he didn't want me to go alone. As it turned out, the burn wasn't serious, and the sol-

to destroy the vehicles. The road was so narrow that I was worried about my tanks passing so close to burning vehicles as their ammunition exploded.

We destroyed three tanks, one ZSU 23-4, and some armored personnel carriers prior to battalion telling us to leave the rest of the vehicles for follow-on forces. We picked up the pace of our move as word came down that a ceasefire would go into effect at 0800 hours. We moved through the fog and haze, bypassing several enemy vehicles and dismounted soldiers to establish a blocking position facing south just prior to 0800. Sitting in the desert under a sky darkened by the smoke of oil well fires, we all slumped a little and felt the fatigue wash over us as 0800 passed, and the war came to an end.

Exact dates, times, and places on a map hold little importance in my memories of Desert Storm. The things that stand out are the people and the emotion that can never be fully explained by those who fought, or fully understood by those who didn't. I remember the immense pride that swelled within me when my loader pressed "play" on his portable audio cassette and I heard Lee Greenwood's *God Bless the U.S.A.* as we moved forward into the breach. I remember the loneliness and pain I felt writing letters home to my wife, kids, and family, knowing that we would soon be fighting. The fear of the unknown ... was I ready? Was there anything more I could do to prepare myself or my platoon? This was the self-doubt that soldiers at all levels must feel prior to combat. Aside from my love for my wife and family, I have never experienced such strong emotions. I learned more about myself as a soldier, an officer, and a man in the 100 hours of Desert Storm than I had in my 35 years.



CAPTAIN DAVID NORTON began his military service in 1983 as a voice intercept operator. He served with the 511th Military Intelligence Battalion in Ludwigsburg, Germany, and the 3d Armored Cavalry Regiment, Fort Bliss, Texas, prior to receiving his commission from Officer Candidate School in 1990. After attending Armor Officer Basic Course, he served with 1st Battalion, 34th Armor as a platoon leader and tank company XO. He completed Armor Officer Advanced Course and later served as the brigade plans officer with 1st Brigade, 2d Infantry Division in Korea. He commanded A Company and Headquarters and Headquarters Company, 1st Battalion, 34th Armor, and also served as the battalion maintenance officer. A graduate of the Defense Language Institute, he is currently instructing Army operations and tactics at the Military Intelligence Officer Basic Course at Fort Huachuca, Arizona.

We attacked through the night, stopping just before sunrise. I can't say exactly when the passage of lines started, or exactly when we stopped, but I do know that the night of 26-27 February was the longest of my life.... Later, with no sleep and only an MRE, we once again moved out in pursuit of the retreating Iraqi army.

moved along a single trail, all aware that a relatively small force with light anti-tank weapons could have stalled our move indefinitely. We didn't meet any resistance, but we did see a number of dismounted Iraqis as we continued to move. The night grew extremely dark; due to the hazardous terrain and soldier fatigue, we were forced to stop. The commander ordered the task force to halt, establish local security, and get a few hours rest so we could move again at first light. I stopped my tank and had my platoon jockey around to provide all-around security. The road was so narrow that by the time we were in place, I could jump from tank to tank.

I knew how tired everyone was, so I told my tank commanders to get their soldiers as much sleep as possible. We went to 50 percent security, with two soldiers in each turret. We heard reports of Iraqi dismounts in the holes and ravines around our position, but no one in the platoon saw any. Approximately 100 meters to our front, where the rest of the company had stopped, we heard machine gun fire as tank crews tried to frighten Iraqis out of the area. After making my rounds, checking on soldiers, and ensuring security was in place, I rolled out my bag for some much-needed sleep.

I had my bag rolled out on the blowout panels and was just getting ready to pull my boots off when the tank commander of my three tank jumped across to mine.

dier was able to continue to perform his duties. After returning the medic to his vehicle, I climbed back on my tank.

Before going to sleep, I thanked God that we had come so far without serious injury to the platoon. I also thanked Him for the way 2d platoon had come together, and I drifted off to sleep. A short time later, I was awakened by the explosion of two mortar rounds near our tanks, but exhausted by the past 3 days, I asked if anyone was injured, rolled over, and went back to sleep.

We moved out at 0600 hours, amid rumors of a pending ceasefire. Charlie Company moved out ahead of the task force, taking the shortest possible route to block the route of Iraqi forces retreating north. The company executive officer (XO), who was leading the company, used a GPS to navigate our way out of the "valley of the boogers." Topping a small rise in the road, the XO reported an enemy tank to his front. A SABOT round at 500 meters set the enemy tank ablaze and we continued to move. A few minutes later, as my platoon passed the burning tank, the XO reported more enemy vehicles to his front. These vehicles were facing in the opposite direction and appeared to be unmanned. The commander told the XO to continue to move and not engage the enemy vehicles. We would use thermite grenades to destroy the vehicles and save our main gun rounds. I asked the commander to allow my platoon, the trail platoon,

DESERT STORM — The First Firefight

by Captain Jonathan J. Negin

(Reprinted from the March-April 1994 *ARMOR*)

The 3d Platoon, I Troop, 3d Squadron, 3d Armored Cavalry Regiment (3/3 ACR) made the first ground contact of Operation Desert Storm on 22 January 1991. It has been well over 3 years since then, and from after-action reviews, I realize that this was just the prelude to larger and more significant battles in the war. However, this was the first contact, and despite its small scale, it is interesting because of its relevance to combat on a larger scale.

We received the mission to conduct a moving flank screen westward to an overnight observation post, and screen back the following day. We were clearing the sector to our west for the 24th Infantry Division to occupy on the regiment's left flank. First platoon was following 4 to 6 hours later with a similar mission.

Our final destination was more than 100 kilometers from the squadron assembly area, so logistics and communications were a major concern. Accordingly, we brought long-range antennas and formulated contingencies for resupply. Unfortunately, because of the distances involved, we left our habitually associated M106 4.2-inch mortar carrier behind. Later, we wished "blue 7" and Staff Sergeant James Kennedy's indirect firepower had been available. We did have an unexpected "attachment" when Colonel Douglas Starr, the regimental commander, and his Bradley crew took this opportunity to conduct a leader's reconnaissance with our platoon. We also had a ground surveillance radar track from the 66th Military Intelligence Company, with Sergeant Todd Morgan as the squad leader.

The weather was clear and cool as we departed to the northwest over varying rocky, sandy, flat, and sloping terrain. Observation was outstanding everywhere as we paralleled the berm between Saudi Arabia and Iraq. Along the way, we encountered a military police squad securing a main road northward to a town that recently had been under Iraqi mortar attack. This was a reminder that we were operating in unsecured terrain. Colonel Starr informed me that allied aircraft were scheduled to attack that evening to destroy the enemy mortars.

We continued our mission westward without further contact. As we neared our



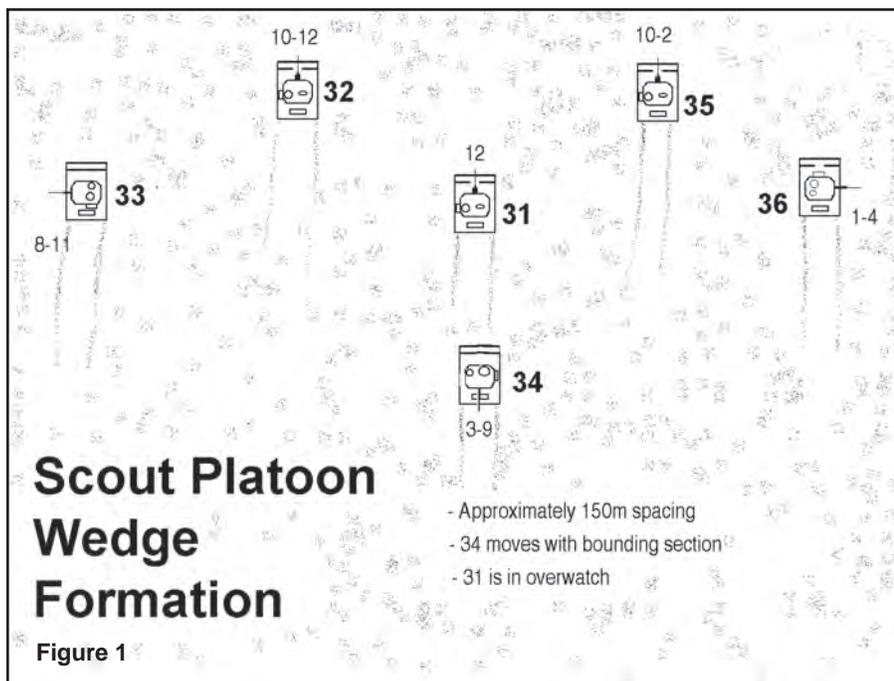
objective, Corporal Alvin Gage, gunner for I32, detected something on the horizon about 5 kilometers to the west. I maneuvered the platoon from a staggered column to a scout platoon wedge (see Figure 1). We developed this formation for maneuvering toward targets of opportunity during a hasty attack, moving independently as a scout platoon, or platoon-sized raids, including situations such as we now faced. The formation enhances 360-degree security and flexibility, as well as provides good command and control. It also allows scout sections freedom to maneuver, of which I now took advantage.

I notified Colonel Starr on my higher radio net that I was sending a section forward to investigate. The colonel also went forward. As Bravo section maneuvered forward, they reported the vehicle as an abandoned "low boy" trailer. However, from here, they identified some Saudi border guard vehicles on a ridge about 3

kilometers to the north, near the first vegetation we had seen all day.

The platoon moved forward into its wedge and continued forward to the next ridge line. Colonel Starr was now in front and dismounted to talk with a Saudi captain. From here, we saw the faint outline of unidentifiable equipment in the dusky distance of the next ridge line. The equipment was on the enemy side of the berm, which now was clearly visible at the bottom of the slope to our front. Remarkably, there was also a large, two-story building in the valley below. It was the first structure we had seen in days.

Colonel Starr quickly briefed us that there was a Saudi border patrol engaged in a firefight in and around the building to our front. The Saudi captain requested our assistance. How could we refuse? As we headed down the gradual slope, we could see the shallow valley, densely cov-



Scout Platoon Wedge Formation

Figure 1

ered by scrub and scattered bushes, affording decent concealment and some cover. The far side of the valley rose to the limit of our observation about 10 kilometers distant.

The sky was overcast and dim as Colonel Starr prepared us for what was about to unfold. He ordered me to have the platoon close all vehicle hatches, move on line, and prepare for contact as we descended to the berm. We readied our weapons and minds as we intently scanned the valley below. I glanced about at our formation and spacing. We pulled into hull-down positions along the berm with about 150 to 200 meters between vehicles. The berm was 5 to 6 feet tall, consisting of bulldozed dirt and rocks at a formidably steep angle on both sides. I sent my observers forward for local security and looked directly into Iraq for the first time.

Scattered Saudi soldiers moved in and around the lone structure. Border guard trucks pulled out to the west as we arrived. We caught glimpses of the enemy as they ducked in and out of the vegetation to our front. The firefight that had been taking place took on a frightening new dimension with the arrival of the awesome firepower of a Bradley scout platoon. Soon, we all would learn exactly how effective the 25mm chain gun can be. The enemy could not have been ready for what was about to happen. We had already achieved surprise on the battlefield.

Colonel Starr calmly directed us to scan for targets, but he ordered me to let him know before we engaged. After a few

moments of scanning, I heard the report of a 25mm gun to my right. Colonel Starr was conducting reconnaissance by fire in the vegetation 1,000 meters to our front. I took this as a sign and commanded my platoon to engage any targets that presented themselves. Colonel Starr continued to engage at intervals and I began receiving reports from Alpha section. They were engaging troops and a bunker, 1,800-3,000 meters distant, with high-explosive (HE) rounds.

Colonel Starr told me to control my fires because he saw the rounds lofting high into the air. I explained to him that this was the trajectory of HE rounds at extended ranges. Staff Sergeant Terry Buchanan, commander of I32, said he actually saw enemy soldiers attempting to dodge incoming rounds they observed in flight.

Alpha section thoroughly covered the bunker with suppressive fire. "It just lit up," Sergeant Morgan later told me. The only enemy soldiers we now saw were fleeing out of our range into other bunkers. These targets easily would have been within 4.2-inch mortar range.

Colonel Starr maneuvered his Bradley forward after he saturated an area to his front with 25mm armor-piercing rounds. He was advancing to flush out enemy soldiers we identified trying to hide in the vegetation to our front. Tracers sprayed all around him as he attacked. He reported that he had pinned down some enemy soldiers and requested that I dispatch a section to assist him. I decided to send Bravo section across the berm because they had no targets in their sector.

The situation had developed into a hasty attack (see Figure 2). We had suppressed the enemy activity and it was time to assault. If we would have had mortars, we could have covered the entire area, including the dead space, and engaged the hazy targets on the horizon. Staff Sergeant Steve Ruch, in I35, initiated the assault by quickly crossing the berm and dashing to the enemy's flank. Staff Sergeant Peter Baez, in I36, had trouble negotiating the berm. He moved 500 meters behind I35, but still covered his exposed flank. It was not a flawlessly initiated assault, but it was taking shape.

After Bravo section deployed, I was concerned about my left flank, so I instructed my dismounted scouts to focus on that area. Bravo section searched for targets in the thick brush as they closed on the enemy. Alpha section continued to engage on the right. I cautioned the platoon to ensure they could positively identify both "Rifle 6" and Bravo section before they engaged. Strangely, safety was foremost on my mind at this point. If they could not see all the friendly elements, they were not to fire at all.

Colonel Starr later said we were under small caliber mortar fire, but I barely noticed its presence. The assault developed rather slowly because of difficulty negotiating the berm. Since we appeared to have suppressed the enemy, I began to search for a spot to cross the berm and directed Alpha section to do the same. Alpha began to cross as I35 reached the objective. I told Alpha to hold in place and continue to scan, engage, and report.

Suddenly, I35 came under fire! I saw the flash and smoke of projectiles impacting on I35 as it moved through the enemy position. Staff Sergeant Ruch's voice came over the radio. "I've got casualties in the back! My track's full of holes!" Welcome to war, lieutenant. The word "casualties" hits hard. God, let them live. My gunner and I hung our heads momentarily in disbelief. This was war.

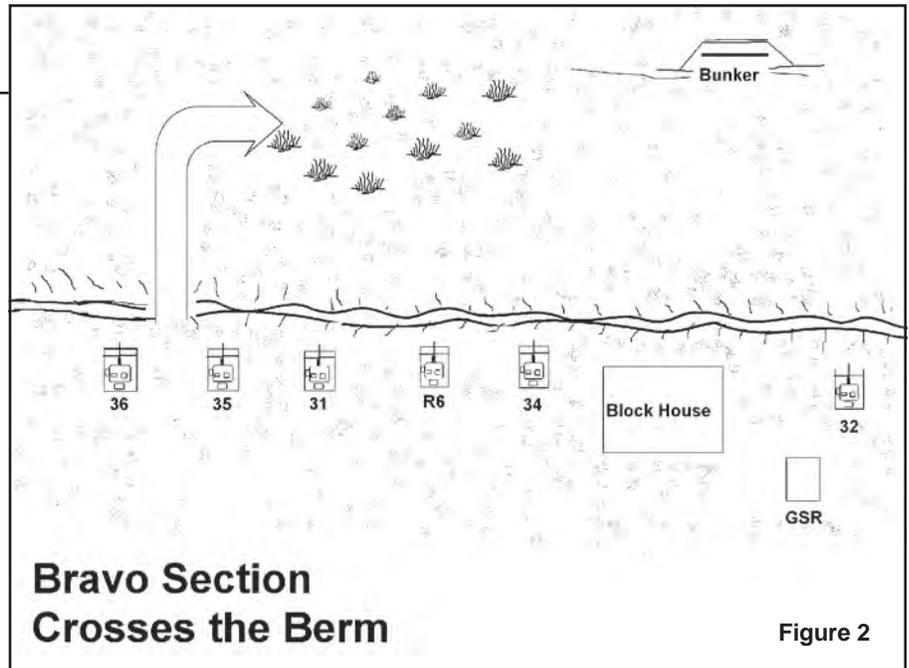
I told Staff Sergeant Ruch to return to the berm, treat his casualties, and report to me. I directed I36 to continue the assault. I informed Colonel Starr of the situation and he agreed with my decisions.

Soon thereafter, Staff Sergeant Ruch reported that his vehicle was full of smoke and that both his scout observers had received leg wounds. One wound was minor, the second more serious. Private First Class Kelly Ocon, driver of I35, skillfully drove the Bradley back through a hail of enemy fire. It was an extremely deter-

mined effort and a tribute to the teamwork and training of the crew of I35.

Once back on our side of the berm, the slightly wounded soldier, Corporal Mark Valentine (a combat lifesaver), stabilized and controlled the bleeding of the other casualty, Specialist Trey Garrison. Later, we counted 15 holes of differing sizes in I35, the first Bradley tested in combat. The few penetrations were made by older model antitank weapons; we were lucky that most of these rounds either didn't fully penetrate or passed harmlessly through the less vital areas of the Bradley.

Meanwhile, I36 closed on the objective. The enemy seemed disheartened after subjecting a Bradley to such intense fire and watching it drive away, evidently undamaged. Those on the objective raised their arms in surrender. I36 stopped on the near side of the objective and dismounted three soldiers to collect the prisoners. Dismounts from Rifle 6 assisted. Sergeant Bryan Hunt, gunner of I36, identified an enemy heavy machine gun team preparing to engage our dismounted soldiers. Acting independently, he swiftly



and accurately destroyed them with 25-mm fire. The enemy had seen enough and didn't care to provoke any further attacks. The assault was complete, it was time to withdraw and reconsolidate.

Staff Sergeant Baez loaded the prisoners on the trim vane of Rifle 6 and moved them back across the berm, where my platoon sergeant, Sergeant First Class Emilio Rios, took charge of them. We moved



"Meanwhile, I36 closed on the objective. The enemy seemed disheartened after subjecting a Bradley to such intense fire and watching it drive away, evidently undamaged. Those on the objective raised their arms in surrender."

back about 3,000 meters to evacuate our casualties and process the prisoners. We occupied a platoon assembly area and moved the casualties and prisoners to the center.

Colonel Starr contacted Blackhawk helicopters from regiment to evacuate the wounded and prisoners. We systematically searched the prisoners. They were between the ages of 18 and 45, well armed, but otherwise poorly equipped. Some were frightened and others seemed to accept their fate. The war was over for them.

Later, our squadron S2, Captain Paul Hovey, told me this had been a good drill for all allied echelons of enemy prisoners of war (EPW) processing. It validated the system that the allies already established. Once the Blackhawks departed, we displaced to the vegetation on top of the ridge where we had first made contact with the Saudi captain. Night fell as we secured our perimeter and Colonel Starr arranged for aerial resupply. I quickly assembled my Bradley commanders to issue orders and conduct a short after-action review.

After night settled in, the ground surveillance radar reported activity in the valley below. We remained vigilant for a possible counterattack. Colonel Starr had called two OH-58D helicopters and an A-10 into the area. They verified that the enemy was evacuating bodies from the battlefield. The aircraft tried to identify further targets. We saw tracers fly through the air as the enemy unsuccessfully tried to shoot down the A-10 as it made its passes. Colonel Starr called off the close-air support and left to brief the corps commander. We girded in for a tense, yet uneventful, night.

It was crisp and cool the next morning as we returned to the squadron assembly area. Everyone was excited about our return and immediately inundated us with questions. The squadron commander snatched me away to the squadron tactical operations center (TOC) to debrief the squadron and troop commanders and staff. Below are the lessons learned that I related to them, and some that I have reflected on since. Many confirm what I already have learned in my Army experiences and schooling.

- The Army trained us well. The soldiers responded as they should have. The Army should continue to emphasize leadership development programs, such as primary leadership development course (PLDC) and basic and advanced noncommissioned officers courses. Cohesion, teamwork, and leadership allowed us to be a

flexible and responsive unit, and rapidly and effectively react to any situation that presented itself.

- Combat experience is exceptionally valuable. Colonel Starr set the tone for success with his calm, poised, and confident bearing. We should ensure that combat lessons learned are perpetuated and internalized through officer and enlisted professional-development programs.

- Cover your wingman. Emphasize section-level gunnery and the wingman concept during tactical exercises. Section-level teamwork represents fire and maneuver at the lowest tactical level.

- The 25mm chain gun is a devastating weapons system. Our engagement highlighted its impressive rate of fire and influential and lethal impact. Crews should have absolute confidence in this weapons system based on its effectiveness as demonstrated in combat. One minor improvement includes the necessity for a turret position indicator in the gunner's sight margin.

- Always retain some form of indirect-fire support. Our effectiveness would have been much improved if we had responsive indirect fires available. We could have inflicted much more shock at longer ranges and perhaps assaulted deeper into enemy territory under the cover of indirect fires. There is always dead space to cover. Even a 60mm mortar organic to the platoon would have been valuable. Indirect fires are most critical to scouts, not necessarily to kill, but to suppress the enemy and buy time to perform security and reconnaissance missions. Reconnaissance by fire is a useful technique when firing into a concealed area, if the ammunition is available. I would have preferred to execute reconnaissance by fire using indirect fires. Combined arms win.

- Train to use the tube-launched, optically tracked, wire-guided (TOW) missile on bunker targets. We could have imposed more damage on the enemy if we had used this technique, but it never entered my mind until later. We could integrate this into the UCOFT program and reinforce it by firing at bunkers at long range during TOW live-fire exercises. However, HE should be the primary ammunition against bunker targets, if within range.

- Develop a method to communicate with your dismounts. Scout certification courses should incorporate dismounted engagements, requiring the vehicle commander to control his dismounts in a tactical scenario. Failure to maintain con-

trol of dismounted personnel can lead to mission failure, or worse — the dismounts actually hindering mission accomplishment. There are many techniques to maintain communications with dismounted personnel, which include employing radios, gunnery flags, vehicle horns, lights, or exhausts. We should ensure we develop and train these skills according to the unit's standard operating procedures (SOP).

- In a strange way, even in combat, safety is paramount. Controlling fires and maneuvering elements are critical to mission accomplishment and preserving the force. At every level, fire plans and sound SOPs for engaging targets and identifying friendly and enemy forces are vital for success. We should continue to emphasize fire commands, fire plans, and vehicle identification in our gunnery programs, especially during live-fire exercises, including maneuver.

- Corporal Valentine and Specialist Garrison received overwhelming medical attention as the first combat casualties in our sector. Valentine returned to us 4 days later and Garrison several weeks thereafter. Lieutenant General Luck, the XVIII Airborne Corps commander, flew to our location to award Valentine his Purple Heart in front of the troop. "This award sucks," he said on a bleak, miserable Saudi afternoon. I agreed; the battlefield is a dangerous place. Fortunately, despite other combat operations, this was the last Purple Heart any of my troopers received.

After the excitement, 3d platoon, I Troop, was famous in the regiment. I let my soldiers enjoy the attention, but thought ahead to the day when the real offensive would begin and reminded myself that glory is fleeting. I prayed we would fare as well in the battles to come and wished the same for all those wanting to know "what's it like?"



CAPTAIN JONATHAN J. NEGIN was commissioned in 1988 as a Distinguished Military Graduate from Fresno State University's Reserve Officer Training Corps (ROTC) program. His military education includes Armor Officer Basic Course, Scout Platoon Leader Course, Cavalry Leader Course, and Armor Officer Advance Course. He has served as a tank platoon leader, scout platoon leader, and troop XO, I Troop, 3d Squadron, 3d Armored Cavalry Regiment (3/3 ACR); and assistant S3, 3/3 ACR. He is currently assistant S3, 1st Squadron, 7th Cavalry, Fort Hood, TX.

The Fight for Kufa: Task Force 2-37 Armor Defeats al-Sadr's Militia

by Major Todd E. Walsh

(Reprinted from the November-December 2004 *ARMOR*)

As coalition forces entered their second year of the war in Iraq, the 'Iron Dukes' from Task Force 2d Battalion, 37th Armor (TF 2-37), attached to the 2d Armored Cavalry Regiment (ACR), headed toward the holy city of Najaf and its smaller sister city, Kufa, to suppress the widespread April Mahdi militia uprisings. Najaf and Kufa had become a base of power and influence for Muqtada al-Sadr and his militia.

Al-Sadr, a radical Shi'a cleric who derives his legitimacy from his martyred father, was intent on driving a wedge between Iraq's interim governing council, coalition forces, and the large Iraqi Shi'ite population. His militia, or Mahdi army, had initiated the uprisings across Iraq during the first week of April 2004 to hinder coalition and Iraqi security efforts and jeopardize regional stability needed for the forthcoming transitional government. Al-Sadr's center of influence lay in the old town of Najaf, near the revered Imam Ali Shrine, and his militia had spread to Kufa in an attempt to control its inhabitants and key bridges to the two cities. Located roughly 150 kilometers south of Baghdad along the Euphrates River, the cities of Najaf and Kufa are separated by only a few kilometers of suburban sprawl and industrial park, the locale where Task Force 2-37 was positioned to protect coalition provisional authorities and to better strike the enemy.

On 22 April, in a brilliant feint by the 2d ACR, using the 3d ACR in a limited attack on the eastern bank of the Euphrates just east of Kufa, TF 2-37 moved under the cover of darkness, without incident from a distracted enemy, into forward operating bases (FOB) Hotel, Golf, and Baker to relieve exiting Spanish forces. That evening, the task force moved 29 M1A1 Abrams integrated management (AIM) tanks, 62 M966/1026-series guntrucks, 33

M1114 up-armored high-mobility multipurpose wheeled vehicles (HMMWVs), 2 M1117 armored security vehicles, 6 M109 Paladins, 4 M1064 120mm mortar carriers, 2 towed 120mm mortars, and various combat support vehicles into the Najaf-Kufa city limits. Before the enemy could react to the infiltration of forces between the two cities, the Iron Dukes had forward positioned the task force in a lodgement that would eventually bring about the defeat of al-Sadr's militia — five bloody weeks later.

Over the next several weeks, the task force, composed of two tank companies, two light-wheeled ground cavalry troops, one up-armored military police company, one motorized combat engineer company, and a Paladin battery, deliberately expanded its zone of influence in Najaf and Kufa. The two tank companies and two light-wheeled ground cavalry troops were all task organized into tank and cavalry teams on arrival, giving the task force commander numerous tactical options for future missions.

Initially, it was tough going, with every patrol or logistics convoy subject to ambush whenever they left an FOB. Quick reaction forces, composed of a tank section or platoon, were released when contact was made to further develop the situation. It became readily apparent that the enemy favored certain areas in the city to initiate attacks, and after identifying enemy-oriented named areas of interest, the task force took steps to target enemy cells.

Patrols did not continue movement after an ambush; the ambushed patrol or convoy had to get out of the kill zone and establish a base of fire, while maintaining contact with the enemy until a reaction force arrived to hunt down and destroy remnants. Sometimes this would take hours and would develop into





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a sustained firefight once the ambushers were either reinforced or cornered. The Iron Dukes had the time and tactical patience for a systematic and deliberate approach in dealing with the enemy after every ambush. This finally brought the task force freedom of movement along main supply routes into and out of the city, as the enemy's outlying forces were attrited.

As the task force expanded its battlespace, a number of operations were undertaken to apply continued pressure to al-Sadr's militia and political organizations. These operations were designed as limited attacks to gain intelligence, draw out enemy forces, and attrit as much of the enemy as possible.

A number of company- and task force-level operations were conducted throughout May in a successful effort to disrupt Mahdi militia command and control, isolate his remaining forces, and prevent his ability to reinforce and resupply. Attempts were also made to target several key lieutenants in al-Sadr's organization; some of these attempts were very successful. Elements of the task force captured al-Sadr's deputy and his chief political advisor in two separate raids, further limiting al-Sadr's control over his forces and his ability to make direct coordination with followers spread throughout Najaf and Kufa. Intelligence sources reported confusion among al-Sadr's inner circle of lieutenants, many of which had fled the area or had gone to ground. This set the conditions for the task force to fully isolate Kufa and any Mahdi militia therein from the rest of al-Sadr's army. Kufa operations were deemed less sensitive than conducting offensive operations in old-town Najaf, near the Imam Ali Shrine.

By the end of May, al-Sadr's remaining forces were split and isolated in the old town of Najaf and in a loose defensive perimeter around the Kufa Mosque. During the last week in May, rumors of talks between al-Sadr, Ayatollah Sistani, and local tribal leaders were ongoing in an effort to bring about a peaceful solution to the Mahdi militia problem. The constant pressure was working. Intelligence sources also confirmed that much of Najaf and Kufa's 750,000 inhabitants were fed up with the fighting and wanted an end to hostilities and called for the departure of the Mahdi army. With this backdrop, the task force began plan-

ning and executing a series of final attacks into the heart of Kufa to destroy remaining militia and seize weapons caches, keeping constant pressure on al-Sadr's organization to force a favorable political solution.

At 2200 hours on 30 May, TF 2-37 initiated Operation Smackdown, the first in a series of attacks into Kufa that would take place over the next 96 hours. The initial attack, which included Team Apache, A Company, 1st Battalion, 2d ACR; Team Iron, I Company, 3d Battalion, 2d ACR; and Team Crusader, C Company, 2-37 Armor, was a limited attack or probe to gauge Mahdi militia defensive positions around the Kufa Mosque.

The task force conducted the near-simultaneous and coordinated maneuver of its teams in a force-oriented zone reconnaissance directed toward the Kufa Mosque from the north, west, and south. Limits of advance were established 500 to 800 meters from the mosque, along the enemy's suspected perimeter defensive positions.

Company/teams had to maintain full situational awareness of adjacent-unit progress and location during the reconnaissance to mitigate the risk of fratricide and prevent enemy infiltration in between and behind friendly units.

Crusader made contact as it entered the western side of Kufa, and Iron made contact as it conducted reconnaissance from the south along a more rural approach. Fighting continued for over an hour with multiple rocket-propelled grenade (RPG) and small arms engagements from alleyways and overgrown palm groves. Shortly before midnight on the eve of Memorial Day and just before elements of the task force were to withdraw from contact, two M1A1 Iron Duke crewmen were killed in action. A tank platoon leader from Team Crusader, and the other, a tank loader in Team Iron, died courageously while engaging the enemy and gaining vital intelligence for the task force. This intelligence would be used to take the fight to the enemy deeper into Kufa in the upcoming operations. The Iron Dukes confirmed 22 enemy fighters killed in action, as well as the composition and disposition of the Mahdi militia's outlying defenses and observation posts.

At 1800 hours on 1 June, the Iron Dukes initiated the second Kufa force-oriented zone reconnaissance of Operation Smackdown. The purpose of this follow-on operation was to further reduce the offensive capabilities of al-Sadr's militia within Kufa. Key tasks were to destroy enemy fighting positions that made up the enemy's perimeter defense around the Kufa Mosque and destroy al-Sadr's militia within western Kufa. In addition, the task force planned an information operation to mitigate any hostile reaction to the attack. This second attack, conducted in the late afternoon and timed to take advantage of daylight, included Team Aggressor, A Company, 2-37 Armor; Team Iron, I Company, 3d Battalion, 2d ACR; and Team Crusader, C Company, 2-37 Armor. This was another limited action designed to penetrate farther into the Mahdi militia defensive positions around the Kufa Mosque — with limits of advance as close as 350 meters from the mosque compound. This time, however, the task force offset the attacks, but still coordinated the maneuver of its teams to achieve a desired effect on the enemy.

Both Aggressor and Iron attacked from the south, covering the rural farmland and palm grove expanse south of Kufa, with Aggressor in the west and Iron in the east. The intent was to draw the enemy south away from Crusader's axis of advance through zone five, allowing Crusader the element of surprise and unimpeded movement to Phase Line (PL) Ginger.

Movement for Aggressor and Iron was canalized and slow, and all vehicles, including tanks, had to restrict maneuver to the roads. Aggressor had sporadic contact as it maneuvered to its support-by-fire position, and Iron's advance went unopposed. As the two teams approached their limits of advance, Crusader was launched into the attack. Heavy fighting ensued when Crusader reached PL Ginger, with the enemy resisting from positions around an abandoned police station and cemetery in the vicinity of target reference point (TRP) 003. Crusader tanks received machine gun and RPG fire from the Kufa Mosque outer wall, but continued its attack to limit of advance (LOA) Janie. The enemy also made several desperate attempts to reinforce his cemetery position, but was met with lethal precision tank fires, which quickly eliminated any elements that closed on the position in the crossfire.

The Iron Dukes confirmed another 40 enemy fighters killed in action, as well as the composition and disposition of the Mahdi militia's inner defenses around the Kufa Mosque. Within 36 hours, the task force would launch the culminating attack of Operation Smackdown, while maintaining the initiative and keeping pressure on al-Sadr's organization. If effective, the continued destruction of the enemy would allow coalition-backed mediators to meet any al-Sadr peace gesture from a position of power.

At 0630 hours on 3 June, the Iron Dukes initiated the final Kufa attack of Operation Smackdown. The purpose of this follow-on operation was to completely reduce the offensive capabilities of al-Sadr's militia within Kufa. Key tasks included destroying reinforced enemy fighting positions that made up the enemy's perimeter defense around the Kufa Mosque and destroying militia mortar positions in an occupied schoolyard just 300 meters northwest of the mosque.

For several days, forward operating bases Golf and Baker had been on the receiving end of enemy heavy mortar (120mm), but could not respond with counterfire due to the proximity of non-combatants to the enemy mortar firing positions. The task of eliminating the enemy's indirect threat in Objective Oakland was given to Iron Troop. Due to restricted urban terrain around the schoolyard and the need for Iron to get quickly onto the objective with surprise, the task force commander decided to have only two teams participate in the attack with the remaining combat power left available in reserve. Unlike the preceding operation, Crusader Troop would attack first along its axis of advance through zone five up to LOA Janie. This would put Crusader in a support-by-fire position (the anvil) to draw the enemy away from Objective Oakland and allow Iron Troop (the hammer) to attack from the north and seize its objective before the enemy has time to react and reposition.

Crusader started its attack shortly after 0630 hours and proceeded 500 meters into western Kufa before it made contact with the enemy. Contact was light and Crusader continued the attack to PL Ginger without losing momentum. At 0645 hours, Iron Troop began its attack from command post (CP) 54 to 60 to 40. Iron Troop led with a tank platoon along this axis of attack followed closely by its organic cavalry. As the lead tanks approached CP 40, six subsurface daisy chain mines were detonated in the road, followed by enfilading small-arms fire from several large buildings to the southeast. Undeterred, Iron's tanks continued the attack toward Objective Oakland to set the outer cordon and provide the scouts needed security outside the schoolyard. As the tanks rolled up to and around the schoolyard complex, Iron's cavalry and mortar section attacked to seize the three large school buildings inside the compound.

Fighting broke out immediately within the school and room-to-room clearing became necessary. With mounted inner cordon scouts fixing and suppressing enemy on the second floor of the largest building, the clearing team closed in on the remaining enemy. Ten Mahdi militiamen died where they fought inside the schoolyard, leaving one 120mm and two 82mm mortars open for



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capture with a large stockpile of rounds. The enemy heavy mortar threat had been eliminated.

As Iron cleared the objective, Crusader reported movement of a platoon of militia toward the schoolyard from the south. Furthermore, the enemy, as reported by Iron's tanks, attempted another envelopment from the north with an additional platoon of dismounts.

As captured equipment was loaded from the schoolyard onto Iron Troop's trucks, the outer cordon of tanks and cavalry began contact with the enveloping enemy dismount force. The outer cordon had set deliberate positions at key inner city road intersections covering most dismounted avenues of approach into the schoolyard. Crusader disrupted the enemy's ability to effectively reposition forces in mass with precision tank fires, allowing Iron's outer cordon to destroy enemy counterattacking forces as they were piecemealed into the fight. This fight continued for about 45 minutes until enemy action had tapered off to just a couple of small groups of dismounts attempting to work the periphery, but were unwilling to make any concerted attack. Once Iron's clearing team had loaded up its trucks with captured ammo and equipment, the task force commander gave the order to withdraw starting with Iron and then Crusader. The Iron Dukes confirmed another 41 enemy fighters killed in action, as well as the destruction of all Mahdi militia inner defenses outside of the Kufa Mosque.

Within 24 hours, the task force received word that the governor of Najaf had entered into serious deliberations with al-Sadr representatives over the terms of ceasefire and conditions for

standing down the Mahdi army. Different sources speculate that the Mahdi army had been severely attrited in Najaf and Kufa during the preceding weeks with estimated casualties as high as 1,000 enemy fighters killed in action. There is no doubt that the constant pressure applied to the enemy by Task Force 2-37 Armor's force of arms, the discipline of its troopers in battle, and the ultimate sacrifice of those Iron Dukes who fell fighting the enemy, singularly contributed to the defeat of al-Sadr's militia in Najaf and Kufa. This measure of force led directly to the current stability enjoyed by the Najaf and Kufa inhabitants today. This article is dedicated to the lasting memory of Lieutenant Ken Ballard and Specialist Nicholas Zimmer — Iron Dukes to the end.



MAJOR TODD E. WALSH was the brigade executive officer, Ready First Combat Team, 1st Armored Division, Friedberg, Germany, during the time of this article. He received a B.A. from Princeton University and a M.B.A. from Embry-Riddle University. His military education includes the U.S. Army Command and General Staff College, the Joint Fire Power Control Course, Armor Officer Advanced Course, Scout Platoon Leader Course, the Armor Officer Basic Course, Air Assault School, Airborne School, and Ranger School. He has served in various command and staff positions, including executive officer and S3, Task Force 2d Battalion, 37th Armor, 2d Armored Cavalry Regiment (ACR), Operation Iraqi Freedom; observer controller, National Training Center, Fort Irwin, CA; commander, D Company, 1st Battalion, 64th (1-64) Armor Regiment, Fort Stewart, GA; S4 and assistant S3, 1-64 Armor, Fort Stewart; executive officer, B Company, 2d Battalion, 33d Armor Regiment, Fort Knox, KY; and tank and scout platoon leader, I Troop, 3d Squadron, 11th ACR, Bad Hersfeld, Germany.



"A number of company- and task force-level operations were conducted throughout May in a successful effort to disrupt Mahdi militia command and control, isolate his remaining forces, and prevent his ability to reinforce and resupply. Attempts were also made to target several key lieutenants in Sadr's organization; some of these attempts were very successful. Elements of the task force captured al-Sadr's deputy and his chief political advisor in two separate raids, further limiting al-Sadr's control over his forces and his ability to make direct coordination with followers spread throughout Najaf and Kufa."



Retaking Sa'ad: Successful Counterinsurgency in Tal Afar

by Major Niel Smith

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Counterinsurgency is difficult. As a force, we have only begun to rediscover and process the hard lessons of the past, which we largely discarded in our march to build the perfect maneuver and combat force. As a result, the Army is struggling with “nonkinetic” operations — the Army’s entire force structure is designed for kinetic operations, leaving commanders at all levels with few “nonkinetic” tools at their disposal.

During 2006, Team Battle, 2d Battalion, 37th (2-37) Armor successfully set conditions that resulted in pacifying insurgent-dominated territory without fighting any major pitched battles in Tal Afar. The soldiers of Team Battle applied principles learned from training, scholarship, and hard experience to achieve short-term, and hopefully long-term, success in one of Iraq’s most difficult cities.

Following Operation Iraqi Freedom, the northwestern border and farming city of Tal Afar was a relatively peaceful and stable haven in Iraq. During 2004 and 2005, the city emerged as both a hub of insurgent infiltration from Syria to Mosul and as a refuge for insurgents fleeing the campaigns in Anbar province. The city was cleared during a major operation in November 2004 by 2d Squadron, 14th Cavalry Regiment, and again in September 2005 by the 3d Armored Cavalry Regiment (ACR) accompanied by the 3d Iraqi Army (IA) Division. The 3d ACR followed

up on its success by establishing company- and platoon-sized U.S./IA outposts throughout the city to restore order and allow the reformation of civil government and security forces to rebuild. The conflict also included a bitter campaign by Sunni supremacists to exterminate the Shia presence in town, which had the effect of polarizing the populace along sectarian lines.

Our unit, Team Battle, 2-37 Armor, assumed responsibility for west and southwest Tal Afar on 14 February 2006. It consisted of a motorized tank platoon, a dual-purpose tank/motorized platoon, a mechanized infantry platoon, and a combat engineer platoon. The team’s specific tasks included ensuring mobility on the alternate supply route (ASR) in its sector, developing IA and Iraqi Police (IP) capabilities, and defeating the insurgents’ ability to operate in its area of operations (AO). Approximately half of the sector was occupied by friendly tribes, mostly Shia, who formed a partnership with coalition forces to protect their interests and restore a fair government to Tal Afar.

We were fortunate to take over from Fox Troop, 2d Squadron, 3d ACR; they had developed extraordinary relationships with the local populace and tribal sheiks in our sector. Fox Troop had also established U.S./IA platoon-sized patrol bases at strategic locations throughout its sector. By combining aggressive patrolling, engagement of local leaders, and development of human intelligence (HUMINT) from the local population, 3d ACR virtually eliminated insurgent control in the southern and extreme western parts of Tal Afar, and had begun building inroads to the

mixed tribal and sectarian neighborhoods of central and northern Tal Afar at the time of their relief in place.

As a new commander, I was faced with a number of opportunities and potential courses of action to build on Fox Troop's success. It appeared there were three possible directions to take. The first involved continuing efforts in the mixed Sunni/Shia central area, known as the Wahda neighborhood. Although Fox Troop had some measure of success in this area, there were limited options to improve the situation, other than increasing Iraqi Security Forces (ISF) presence. Additionally, the neighborhood was difficult to isolate and was bordered by insurgent support zones to the north and east. The neighborhood was almost fully occupied with a mixed population of 60 percent Sunni and 40 percent Shia, which resulted in a great deal of tension. Fox Troop managed to largely pacify the neighborhood and ISF managed to maintain an uneasy peace between the tribes and sects. Although the temptation to expand the "oil spot" was extremely tempting, focused effort in that area would not have led to major gains elsewhere in sector.

The second option was to begin operations in the central portion of our sector, a heavily Sunni area known as Rubiyah, where there was a strong insurgent cell focused on attacking the Iraqi police. One of the greatest advantages in this area was a local sheik who was willing to cooperate with coalition forces behind closed doors. However, intimidation was high and local support was not especially strong. Complicating the situation even further was the difficult task of isolating the area and limiting insurgent freedom of movement.

The third neighborhood was known as Sa'ad, a mostly empty battleground neighborhood that had seen extensive fighting over the past year. The neighbor houses were nearly two-thirds empty and the remaining residents were almost all Sunni, after the Shia residents had been displaced during the fighting. It was a known hotspot of insurgent activity and support. However, it was easily isolated, bordered the other two neighborhoods, and Team Battle could leverage existing tribes to remigrate into the neighborhood, if it provided adequate security. A plan to enter this neighborhood was not to be undertaken lightly; many coalition forces and ISF casualties had been taken. Additionally, there were few local informants or residents to co-opt.

Of the three options, we decided on Sa'ad because it possessed some unique characteristics that could be exploited. First, the neighborhood could easily be isolated using existing barriers

and security forces, and the natural wadi system reinforced the obstacle plan.

Geographically, the neighborhood was triangular shaped and slightly less than a 1-kilometer square. The ASR bordered on the west; the main supply route, a major east-west city road, bordered on the south; and a deep, but passable, wadi system provided easy infiltration from the insurgent-dominated neighborhood of Quadisyah from the east.

A further analysis of the human terrain was also striking. The neighborhood was once almost evenly divided between Sunni and Shia families. The neighborhood originally began in the late 1980s as an upscale area for Baathist supporters and their families. During 2004 and 2005, insurgent and sectarian tensions caused all but a handful of Shia families to flee the neighborhood after an intense sectarian intimidation campaign. Many Sunni families fled to avoid being caught in the ensuing cross-fire between insurgents, police, U.S. Army, and sectarian groups. By October 2005, the neighborhood was approximately 65 percent abandoned. These structures allowed freedom of movement, bed-down locations, meeting rooms, and cache storage for insurgents. The neighborhood also bordered ASR Santa Fe, the main logistics line to forward operating base (FOB) Sykes and an improvised explosive device (IED) hotspot.

The history of the area also affected the unit's mission. The 3d ACR patrolled the neighborhood regularly, but the density of empty houses occupied by an intimidated populace allowed the enemy to operate relatively freely in the area. Numerous armored vehicles were lost or damaged in the neighborhood and immediate vicinity due to large IEDs. Houses that may have been used as ISF outposts or by Shia supporters to meet with coalition forces were often destroyed using bags of urea nitrate fertilizer. The city's fledgling Iraqi police force refused to operate in the neighborhood due to the perceived strength of insurgent forces there. A lone Iraqi army patrol base occupied the area, but was largely ineffective at curbing insurgent operations in the area due to its small size and isolated location. One abortive attempt in late 2005 at establishing a second U.S./IA patrol base in the neighborhood resulted in a vehicle-borne IED (VBIED) attack, which was fortunately intercepted and detonated prematurely due to an alert Iraqi army soldier. Following the VBIED attack, the base was removed and the unit returned to regular patrolling in the neighborhood and prepared for relief in place with 2-37 Armor.



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What really tipped the scale was the risks-and-benefits analysis of investing fully in each neighborhood. The analysis was conducted using three main criteria: the effect on insurgents if we succeeded/the effect on insurgents if we failed; suitability of the urban and cultural terrain; and the ability to execute with forces available. When applied against these standards, completing success in Wahda would consume too many resources without significantly affecting insurgents' ability to conduct operations elsewhere in sector.

Rubiyah's chances of success were assessed as low due to the lack of ability to rapidly "change" the cultural terrain, which was based on a populace that supported the anti-Iraqi forces (AIF) and the difficulty of controlling access in and out of the area.

Despite its status as the most dangerous area in our AO, Sa'ad was our best chance for success. First and foremost, insurgents would lose a major support zone, which would limit their ability to maneuver in the northwest part of the city, store tactical caches, and use bed-down locations. It would also remove the "support zone" for AIF operations in the Wahda neighborhood to the south, and limit the AIF's ability to destabilize that neighborhood. Finally, it would remove the IED threat from approximately a kilometer of our ASR, increasing the security of coalition forces and logistics convoys.

Visualizing the Fight

Once we decided where to act, the question turned to strategy. First, we knew intelligence would be key to success and allow us to conduct targeted operations. With a neighborhood of displaced people, HUMINT would be critical to discerning AIF from intimidated civilians. We needed to disrupt the insurgents' ability to counter our initial actions by clearing the area prior to follow-on operations. Otherwise, we risked losing any initial footholds into the neighborhood.

Following my first tour in Operation Iraqi Freedom (OIF), the emphasis became withdrawing to larger bases further removed from the population with the intent of taking away the "irritant" of coalition force presence. While well meaning, in practice, we abandoned many areas to insurgent patrols by failing to provide daily security before ISF were capable of standing up.

We had little chance of winning popular support without becoming a constant part of the neighborhood. We also lacked sufficient combat power to permanently invest in the neighborhood and maintain security across the zone, which made handing off to ISF a necessity. This also supported the theater goal of enabling ISF to take the lead; however, the real problem was ensuring ISF was competent and capable of conducting local counterinsurgency operations. The Iraqi army was largely tasked out maintaining their existing operational set, given their liberal leave policy. Fortunately, the city was in the process of receiving over 1,500 new Iraqi police officers who were trained at the Jordanian police academy. Once established, they would be the focus of our main security force, since they were drawn from the local community and some were displaced residents of Sa'ad. Our task would be to ensure they were well prepared and equipped for the task at hand.

Finally, we realized that the ultimate goal and arbiter of long-term stability in the sector would be the return of displaced families. Besides being a humanitarian and positive information operations goal, the remigration of friendly families under an umbrella of joint security would prevent terrorists from using neighborhoods to support their purposes. To do this, we had to leverage relationships established with local tribes.

After considering the above, we settled on the following campaign strategy:

- Phase I included recruiting and developing local informants from the displaced populace to provide an accurate picture of AIF supporters, safe houses, and cache locations.
- Phase II consisted of a cordon and search of the neighborhood to locate insurgents and disrupt insurgent logistics in the neighborhood.
- Phase III established a platoon-sized U.S. patrol base in the sector to provide continuous presence and security to the populace.
- Phase IV consisted of establishing an Iraqi police station and transitioning daily security to ISF.
- Phase V was to convince the tribes representing displaced families and civilians to return to their old neighborhoods under the new security umbrella.

Phase I: Building the Picture

Developing our intelligence picture was the first major hurdle. This usually difficult task was made easier for us by our predecessor unit. We were fortunate to inherit a large network of informants and contacts developed by 3d ACR during their operations. Despite this, we lacked a cohesive current intelligence picture of the threat facing us in the Sa'ad neighborhood. In fact, we knew very little about the insurgents in that area. We were also reluctant to rush into a dangerous area until we felt comfortable operating in our sector — the unit's first and last 30 days in Iraq are the most dangerous. We implemented an aggressive reconnaissance and surveillance plan to learn the neighborhood while conducting patrols throughout the AO.

Using established relationships from Fox Troop, Team Battle spread the word that it was seeking knowledgeable individuals who knew the Sa'ad neighborhood and its resident insurgents. To directly reach the people, we identified areas where displaced Sa'ad residents resided and spread the word during dismounted patrols that we were seeking information to drive out the insurgency. In coordination with our tactical HUMINT teams (THT), we slowly developed a more specific intelligence picture of the neighborhood, but still did not have the details required to begin operations effectively. To compensate, we increased patrolling in Sa'ad, attempting to elicit information from its residents. Despite great effort, it was apparent that the residents were unable or unwilling to cooperate with us due to terrorist domination of the area.

A breakthrough success occurred when a new informant contact was introduced through a friend. He heard we were seeking to clear the neighborhood and represented a loose coalition of 20 displaced families. The informant produced a spectacular hand-drawn map of the neighborhood, identifying each house. Annotated in Arabic were the locations of known AIF supporters, possible cache locations, and friendly residents. We were excited to get this information, but wary of its details, especially from a first-time informant. In conjunction with our other informants and the S2 shop, we were able to substantially confirm the information's validity.

With information in hand, Team Battle began to set the tactical conditions by reinforcing an obstacle plan set by 3d ACR in the neighborhood. We reinforced existing obstacles and blocked all exit routes from the neighborhood, with the exception of one, which was manned by an Iraqi army checkpoint. This operation forced all vehicles to be searched before they entered or exited the neighborhood. Isolating the neighborhood allowed us to



better cordon the area and at least restrict infiltration of more weapons to the neighborhood.

Phase II: Cordon and Search

There is some argument in the military community over the applicability and usefulness of large scale “cordon and search” or “cordon and knock” techniques. However, we found that when properly executed, they are useful tools during counterinsurgency operations when combined with intelligence, a clear task and purpose, and targeted information operations. We envisioned an initial cordon and search as an enabler that would allow us to potentially trap known terrorists inside the neighborhood and flesh out existing caches. The disruptive effect would provide Team Battle the opportunity to establish an operations base inside the neighborhood.

Having an intelligence picture provided us with the ability to plan a detailed cordon and search of more than 200 houses. We integrated with 1st Battalion, 2d Iraqi Army Brigade, 3d Division to execute the operation. The battalion’s acting commander planned the operation in strict secrecy, in conjunction with Battle Company, beginning 2 weeks from execution. We decided to conduct the operation on a Friday to catch as many people at home as possible and selected 10 March as our target date.

The plan was relatively straightforward. Three U.S. platoons, integrated with three IA companies, would establish a cordon at 0630 hours around the neighborhood to prevent possible escapes. Once established, two IA companies, accompanied by one of our infantry platoons, would conduct a deliberate block-by-block clearance of all houses. All males between ages 13 and 70 would be directed to report to the centrally located primary school, which would serve as the command post for the operation. Having the males report to the school served two purposes: it prevented terrorists from maneuvering inside our cordon; and alerted search teams to regard any male found in a house, on the streets, or hiding as suspect after the cordon was in place.

One of our tank platoons and the company trains were assigned to secure and operate the screening process. A carefully selected panel of informants, in conjunction with our “blacklist,” would identify insurgents and their supporters for further questioning by a mobile interrogation team (MIT), which was on site to gain actionable intelligence. Those not identified as insurgents would be given the opportunity to speak with a THT.

Tactical psychological operations (PSYOPS) teams would provide initial broadcast messages and later help distribute information operations (IO) messages to screened personnel for effects mitigation. An explosive ordnance detachment and mili-

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tary working dog team would assist in detecting and reducing any ordnance found. Finally, aviation would provide support and observation during the cordon and search process, especially in the critical early phase. We planned to screen 200 to 300 males, based on our population estimate in the neighborhood.

A detailed combined arms rehearsal was secretly conducted in an empty warehouse at our joint U.S./IA company base. Each participating element and IA commander rehearsed their roles in the mission, which later proved invaluable during the critical cordon establishment phase. Having had coordination difficulties in prior operations with our IA counterparts, the detailed rehearsal proved vital in ensuring IA leaders understood their roles in the plan.

The raid was executed as planned at 0630 hours on 10 March. Tactical surprise was achieved as the cordon was emplaced, effectively sealing the neighborhood. The search forces deployed while the school was being set up as a processing center. Our infantry platoon and the IA companies began their search in conjunction with the tactical PSYOPS team’s broadcasts. By the end of the search, more than 500 males had been processed, which nearly doubled our estimate. Screening and processing the males took more than 8 hours at the school and we kept the cordon in place the entire time. As it turned out, we severely underestimated the number of residents and the time it would take to process them. An IED cache and a 500-pound unexploded joint direct-attack munition (JDAM) were discovered during the operation. Although we learned many lessons for future cordon and search procedures, the basic template used during this operation was the foundation used for operations elsewhere in the city.

A grand total of 63 detainees were identified for further investigation regarding insurgent activity. We subdivided the group into three categories: AIF leaders, AIF soldiers, and common criminals. The leaders were taken into immediate U.S. custody, the soldiers into IA custody, and the criminals were handed over to the police. The breakdown was 11 into U.S. custody, 20 into IA custody, and 32 into police custody. Statements were immediately solicited from the detainees.

Following the operation, we circulated names and photos of the detainees to ISF, who provided witness statements regarding the detainees. Almost one-half of the detainees, including 9 of the 11 U.S. detainees, were sent to prison for eventual trial by Iraqi authorities. Among the detainees were alleged financiers, IED manufacturers, and direct-action cell leaders.

The operation achieved its intended purpose — disrupting insurgents operating in the neighborhood. The time provided by this operation would allow us to occupy a patrol base in the neighborhood. There was not an enemy-generated significant event in the neighborhood for the next 7 days.

Phase III: Building the Patrol Base

With the insurgent leadership and direct-action cells disrupted in the Sa'ad neighborhood, we had a small window of opportunity during which to establish our patrol base. A patrol base established in the heart of the neighborhood would allow constant patrols and limit insurgent freedom of movement. It was also a visible demonstration of our commitment to win over insurgents and provide security in the neighborhood.

On 14 March, we established Patrol Base "Battle Dwarf" (because of its small size), which was occupied by our infantry platoon. Located in the most dangerous section of the neighborhood, we emplaced barriers along three sides of the patrol base and a wire/spike-strip combo to protect against VBIED attacks such as the one Fox Troop endured. We reinforced our building's windows and roof with sandbags. Kevlar blankets were draped against the windows to guard against shrapnel from mortar attacks or VBIEDs. A platoon quick-reaction force (QRF) was maintained and on standby for quick response to any attack. We rehearsed multiple routes and alternate entry locations to reinforce the base, attempting to avoid "first responder" attacks.

The platoon primarily conducted dismounted operations from the patrol base at random intervals. The patrols conducted thorough searches of empty houses, drank chai (tea) with locals, and distributed the IO message that we were there to stay and to remove insurgent forces. In the first 3 days, major weapons and IED caches were found, including Motorola radios, homemade rocket-propelled grenades, and plastic explosives.

On 18 March, the enemy struck for the first time. A dismounted patrol had just returned and noted that there was no one present on the streets. Several adjacent houses and a small store had closed down midday. Our S2 also reported that an attack was underway somewhere in the city. This information led to an increased awareness and alerted the guards at the patrol base.

Suddenly, the roof guards indicated that some children, who usually played along the protective wire on the mounted avenue of approach, pulled back two strands of concertina to create a small opening in the wire. Immediately, a small car drove at high speed through the hole and across the protective spike strip emplaced about 70 meters from the patrol base, which failed to stop the car. The car was immediately engaged from the rooftop with M240B machine gun fire. The car hugged the extreme side of the near wall as it approached, allowing the rooftop gunner to engage only the passenger side. The soldiers on guard called for everyone to take immediate cover. As they did, the VBIED rolled to a stop near the front door of the base and after a 2 to 3 second pause, detonated. The blast collapsed the outer wall and shattered every window on the block.

Thankfully, all the carefully emplaced force-protection measures held. The Kevlar blankets draped over the windows stopped the shrapnel, and the sandbags and concrete construction protected the soldiers from the explosion. Due to the alert guards, everyone was able to seek some measure of protective cover. Pieces of the car were found more than 100 meters from the point of detonation.

The company QRF responded to the event, as rehearsed, within 5 minutes, and assisted in establishing a perimeter around the site. The remainder of the company quickly followed and nearby units from Company A, 2-37 Armor responded immediately. The IA and IP closed all checkpoints into the area to prevent a possible secondary attack on the responding elements. Post-blast analysis indicated that the explosive was a combination of military rounds and homemade explosives.

No one was killed in the explosion, but four soldiers received minor wounds. We immediately began reconsolidating the gear and equipment inside. After consulting with the battalion commander, we decided to immediately re-establish a new base to reinforce the message that we would not be deterred. The new base would be manned by our engineer platoon while the infantry reorganized from the blast and took a break. Prior to establishing Battle Dwarf, we had explored several houses as potential base locations and chose one of these as our new base, which was located about a block from the VBIED site and provided a commanding view of the area. The battalion headquarters company brought an emergency class IV push, and reinforcements from A Company, 2-37 Armor provided initial security during the establishment of our new base, aptly named "Battle Phoenix."

The enemy did not expect us to re-establish so quickly. They likely anticipated that we would withdraw from the area, as their attack in December had achieved. Patrols immediately resumed, and they located caches and IEDs almost daily. A HUMINT tip led to a suspected IED on 21 March, and as it was being explored, it detonated and caused minor injury to one soldier and destroyed a multifunctional agile remote-controlled robot (MARCBOT).

On 25 March, our infantry platoon was conducting a routine patrol when a homemade IED exploded against a dismounted patrol, causing minor injuries to a soldier's hand. In this case, the patrol identified the triggermen and chased them as they fled across the wadi to the east. The IA apprehended the individuals and turned them over to our patrol. One of the two individuals was a battalion target and an IED cell organizer. Their detention resulted in a quiet phase in the neighborhood and we continued to expand patrol frequency and duration, resulting in the discovery of several caches. Other significant finds included a cell member who later provided critical information leading to the detention of other high-value targets.

On 6 and 7 April, the base received 60mm fire from a mortar team in response to the arrival of IP to our patrol base. On 8 April, a patrol was sent to establish an ambush on the likely point of origin (POO). A buried 120mm mortar, with homemade explosives, exploded against a dismounted patrol that was sent to investigate the POO, killing one soldier and severely wounding another.

The enemy patterned us and used our tactics, techniques, and procedures (TTP) against us. Another IED attack, against an M113 sent to investigate a possible IED, wounded one of our soldiers. We did not let these tragic events deter us from the objective; however, we evaluated and shifted our tactics to better employ IED countermeasures, reduce predictability, and increase ISF cooperation.

At this stage, we began to notice subtle changes in the neighborhood. People were becoming friendlier and more receptive, although HUMINT tips were not increasing. Our company leaders determined that we had reached our limit with U.S.-only forces and more ISF were needed to move the project forward from its current tense stalemate, which was consuming one-third of the company's combat power that was beginning to be needed elsewhere in sector.

Phase IV: Transition and Partnership with Iraqi Security Forces

After nearly a month of operations, we were setting the conditions for the IP to re-enter the neighborhood. When we began operations, the city was still receiving, equipping, and integrating new police. Additionally, they had very few officers and ex-



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perienced police; however, by mid-April, enough police had arrived to establish operations in Sa’ad under Team Battle’s supervision and support. The city police chief arranged for an initial force of 50 IP to conduct joint operations. We established a police outpost on 4 April, which was collocated with Battle Phoenix. The local police station chief ensured his most experienced and aggressive police officers occupied the base, even replacing those who failed to perform to standard. They soon began combined patrols with U.S. forces several times a day.

Given the largely Sunni neighborhood and mostly Shiite police force, there existed a large possibility for sectarian tension, revenge attacks, or further violence. We were extremely fortunate to work with someone of the caliber of the local police chief. He deftly walked the tightrope of being firm, but fair, with the residents, and disciplined the police if they operated inappropriately. He was a local from the neighborhood and was well respected in the community. More importantly, he sincerely cared about bringing security to Tal Afar and wanted his neighborhood families to return to their homes.

Over a 2-week period, we shifted from U.S.-led and -dominated patrols to independent IP patrols. We noticed residents becoming more positive and we soon began receiving tips and intelligence from them. Initially wary, the locals soon warmed and later embraced the new IP presence once it was established that they were not a sectarian hit squad. We once again saw progress in the neighborhood after stalling in early April.

The police chief was so enthused by the success in Sa’ad that he moved his police headquarters into the neighborhood. He requested we place a triple-strand concertina barrier across the eastern wadi to canalize AIF movement to the north or south, where he would establish IP checkpoints. We resourced the wire and emplaced it as a joint operation with the IA and IP to build cooperation between the forces. Although we initially doubted the effect of the barrier, we were pleasantly surprised when the locals reacted positively to the wire and insurgent activity dropped measurably.

On 22 April, we began transitioning Battle Phoenix to the IP following 2 weeks of joint train-up. The IP continued constant mounted and dismounted operations around the area while we supported daily from Combat Observation Post (COP) Battle. Their independent operations resulted in many additional cache finds and a few detentions, but most importantly, we had achieved a major goal — transitioning primary responsibility to ISF while supported by U.S. forces. This had major positive effects in the community and among the local police forces. The only remain-

ing challenge was to convince the displaced populace to return home.

Phase V: Returning Displaced Civilians

One of the most complex aspects of the operation was the intense negotiations surrounding the return of residents to the neighborhood, which began shortly after the original patrol base was established. The sheiks were very cautious about encouraging families to return for fear of insurgent attacks. As a result, they initially made some unreasonable demands such as maintaining a militia in the streets to provide security.

Convincing local sheiks that the area was safe was no small undertaking. In Iraq, perception is reality and the locals heard about casualties and car bombs, but not about the enemy fleeing the area in response to our operations and that ISF were controlling the neighborhood. This was another one of those areas in which the local chief of police played an invaluable role. Since he was a local resident and related to several powerful local personalities, his assistance was critical in gaining support from the tribes. He did so at considerable risk to his own prestige; if the endeavor failed, his position in the community would be reduced and his job imperiled.

After some intense negotiations between security forces, the city mayor, and the sheiks, an agreement was reached. The persuasive arguments by the police chief and mayor won the day. Only males would return to a limited portion of the neighborhood in the beginning to “test the waters.” The IA, IP, and U.S. forces would provide route security to the neighborhood (a concern for residents), and the residents were allowed to keep AK-47s in their homes to protect themselves. If the neighborhood was as secure as they were told, they would return more people and families.

Our first attempt at moving in individuals on 18 April was a failure. The males that returned brandished their weapons in the streets and caused some trouble with local residents. A severe sandstorm and IED reduced the number of forces we were able to provide. The sheiks, angered by a perceived lack of support and under pressure about the weapons incidents, withdrew from the area.

Negotiations over returning the residents soon began again and after some delays and mediation, a more detailed and specific agreement was reached. Heavy security would be provided by U.S. and ISF forces units for the first 48 hours, and in return, the returning residents agreed not to brandish weapons or cause any trouble with existing residents. The chief of police proved crit-

ical to reassuring the Iraqis about providing enough security from ISF.

On 27 April, approximately 50 males returned to the southwest portion of the neighborhood under heavy U.S. and ISF security, including aviation. Eager to avoid a repeat of the attempt nearly 10 days earlier, I collocated with the main Shia Sheik at the site to immediately resolve any problems. Fortunately, the entire move took place without incident. During the initial 2 weeks, we maintained constant vigilance in the neighborhood, especially cautious about sectarian violence or retribution between the returned residents.

Continuing Stability

Maintaining our success was as big a challenge as achieving it. Securing the neighborhood required daily attention from the unit. In mid-June, we felt security conditions were permissive enough to conduct a town hall meeting, with leaders from the neighborhood, to elect a muktar (mayor) and address any grievances that local leaders may have. We conducted our first meeting on 20 June with great success.

Fortunately, none of our fears came to pass. AIF activity remained minimal to nonexistent in the neighborhood. As word spread, families arrived daily, with some returnees traveling over 150 kilometers to reoccupy their homes. The ISF maintained a constant presence and manned checkpoints in the neighborhood. U.S. forces maintained almost daily joint patrols in the area, but refocused on developing the logistics and administrative skills of the IP and IA bases. The ongoing security of Sa'ad now rested almost entirely in Iraqi hands with U.S. forces providing "overwatch."

The operation had great second- and third-order effects in the Wahda and Rubiyah neighborhoods. Removing the insurgent base in Sa'ad denied insurgents easy entry into Wahda. In Rubiyah, residents petitioned for a police base similar to the one in Sa'ad. Our unit and the local police were happy to comply and the program was expanded in other company sectors.

Strategically, the operation became well known throughout Tal Afar and the reputation of the local IP and IA were enhanced by its success. We began focused civil-military operations (CMO) projects to support returning residents, which included "start up money" to repair homes damaged by heavy fighting over the past year. We paid nearly \$15,000 in claims to assist the families courageous enough to return.

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Currently, employment projects are underway with the support of the muktar and the ISF to provide an economic base for residents, including a water well, school refurbishment, and street lighting. Despite this progress, gaining reconstruction dollars is a slow and bureaucratic process, and often the expectation of the Iraqis cannot be met by U.S. forces under the current funding model.

Lessons Learned

Like most successful operations, a clear commander's intent was vital to our success. When the intent is practical and clear, soldiers can tailor their actions to achieve the mission. Likewise, a clear vision in the commander's mind of what he expects the endstate to be assists in evaluating and processing variations and changes to the tactics while maintaining the overall strategic focus.

The presence of force in neighborhoods and communities is fundamental to a successful counterinsurgency. By living among the people and learning their way of life, we gained credibility and demonstrated resolve to stay and solve problems. The enemy expended great effort to expel us from the neighborhood because we were a threat to their operational base. Once the terrorists and residents realized we were not leaving, we gained the confidence of the people, who trusted we could protect them from the terrorists. Eventually, we transferred that confidence to their local police force, which was a huge change. If we had not established bases inside the neighborhoods, we could not have achieved as much as we did.

Living in the city requires careful assessment of how to protect soldiers against the threat. As demonstrated by patrol base Battle Dwarf, force protection can be underestimated and the enemy will analyze and target your weaknesses. The structure of urban neighborhoods and houses make it nearly impossible to guard against every threat — from a thrown hand grenade a few houses over to a suicide VBIED attack. Operating inside a neighborhood assumes some soldier risk in the short term for long-term security. When casualties began to mount, I doubted the wisdom of the strategy. Perhaps sensing my unease, a young infantry soldier told me: "Sir, if we weren't in the neighborhood,



we'd just be getting blown up more outside it." His comment unwittingly framed the issue perfectly.

There are key measures ground commanders can take to minimize risks and casualties. Commanders must understand and employ their IED countermeasure systems properly. These systems must be strategically placed in all patrols — planned and deliberately placed much like a crew-served weapon. We also learned that a .50-caliber machine gun is required at all entry control point (ECP) locations or potential VBIED sites. Barriers and other obstacles must be reinforced; local residents must be briefed and warned of the potentially lethal consequences of tampering with defensive obstacles. Children must be ruthlessly kept away from all ECPs and guard points. Finally, dismounted patrols and mounted patrols must vary routes, times, and movement methods such as wall-hopping, bounding teams, and rooftop jumping.

The ISF was key to our operational success. Understanding the capabilities and limitations of the Iraqi forces in your area is vital. Iraqi army forces in our sector were great for operations but weak in daily counterinsurgency. Iraqi police were highly effective in the daily fight, but due to discipline and equipment problems, were incapable of undertaking large operations. Joint patrols and training at all levels reinforce their legitimacy and ensure their balance regardless of sectarian orientations. Taking ISF key leaders to bilateral meetings (BILATs) and developing direct relationships with local leaders resulted in major atmospheric improvement in our area. Some Iraqi army leaders are not accustomed to "answering to" or "working with" civilians. Direct contact between local sheiks and Iraqi leaders eliminated potential sectarian differences and resolved issues much more effectively than playing the "middle man," which allowed both sides to scapegoat U.S. forces and avoid accountability. Sometimes compromise with Iraqi leaders may be necessary to accomplish the objective — even using methods you may not agree with. Keep in mind that the Iraqis have to live with the result; allowing the Iraqis to "design the solution" creates ownership and facilitates success.

To win in counterinsurgency, the local population must execute the long-term answer; our role is to set conditions that allow Iraqis to independently succeed. In Sa'ad, we set conditions for the return of ISF, who were fearful of operating in a dangerous

neighborhood, which, in turn, set conditions for the return of displaced residents. The continued peace in the neighborhood is a testament to what ISF can do when U.S. forces serve in a committed support role.

Finally, economic prosperity is the motivator for maintaining success in a counterinsurgency environment. A competent and targeted CMO effort to reward those who took risks and gave information helps win the fight. To paraphrase, dollars are the same as bullets in counterinsurgency, but are often extremely difficult to get quickly. A colleague summarized it well, "I have almost unlimited capacity to employ violence, but little ability to employ nonviolence." Gaining nonkinetic economic support remains the biggest challenge to commanders throughout Iraq, and will continue to be a major issue until there is an improved process that empowers front-line commanders to employ dollars as easily as they employ bullets.

The Sa'ad neighborhood campaign was an ambitious attempt to re-take ground held by the enemy. The success of the operation required Team Battle to "break the FOB" mentality and live among the people. Respectable locals will unhesitatingly support U.S. and ISF forces, if they are provided security. It is correct to say that Tal Afar had a unique set of circumstances that assisted in Team Battle's success. Deployed units can help themselves by assessing ethnic and tribal histories and dynamics to shape a strategy for success. I hope commanders and planners can apply the principles we learned at a heavy cost in Tal Afar to protect other areas from insurgent control.



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IN MEMORY: COLONEL JAMES H. LEACH

In December 2009, James H. Leach succumbed to a heart attack at the age of 87. His passing marks the end of a lifelong commitment to the military in general and the mounted maneuver community in particular. Born in Houston, Texas, in 1922, Leach joined the Texas National Guard in 1938. He was just 16, still in high school, and lied about his age to become a tank crewman in the 36th Infantry Division's tank company. By the time of his high school graduation, he had attained the rank of staff sergeant and commanded his own tank.

In 1940, his parent division was activated for federal service as part of an Armywide mobilization. A year later, his tank company had been absorbed into the 193d Tank Battalion (Light) in time to participate in the largest peacetime maneuvers held in the United States. Afterward, he helped to ready the battalion for deployment to the Philippines. Indicative of the state of the Army's readiness at the time, he and other tank commanders studied the operator's manual for the new tanks issued to the unit while traveling across the country to San Francisco, the point of embarkation for the battalion's first overseas deployment. Before reaching the Philippines, however, Leach's unit was redirected to Hawaii.

In 1942, Leach attended officer candidate school at Fort Knox, Kentucky, and became a second lieutenant. Afterward, he joined the 4th Armored Division as a light tank platoon leader in the 2d Battalion, 37th Tank Regiment on the eve of maneuvers held in Tennessee. Upon the conclusion of this event, Leach accompa-

nied his unit to the Desert Training Center in California for further field training that continued into 1943.

By the fall of that year, the 4th Armored Division was stationed at Camp Bowie, Texas. There, it and most other armored divisions underwent reorganization and permanently adopted the combat command structure that would uniquely characterize American armored formations. This change also resulted in Leach's parent battalion being redesignated as the 37th Tank Battalion with three medium and one light tank company. Major Creighton Abrams assumed command of the battalion and Leach began a long-time association with this officer. Leach served as the battalion's communications officer before returning to Fort Knox for gunnery training. When he returned to his unit, he assumed command of a platoon in B Company. In December 1943, the 4th Armored Division deployed to England, where it continued to prepare for a cross channel invasion of Europe.

The 4th Armored Division landed in the Normandy beachhead in July 1944. During the hedgerow fighting that ensued, Leach attained the rank of first lieutenant. He also received his first wound and Purple Heart while fighting in the Normandy bocage. By August, Leach had assumed command of B Company and began a period of continuous operations, during which the 4th Armored Division participated in the Normandy breakout and pursued German forces toward the German frontier. During this period, the formation became known for its high operational

tempo, rapid penetration of German defenses, and aggressive, combined-arms maneuver. By September, with German resistance stiffening and supply shortages slowing allied operations, the 4th Armored Division staged a crossing of the Moselle River and a double encirclement of the town of Nancy. Leach's tank company participated in this operation and the subsequent exploitation to Arracourt. There, the division's Combat Command B, which included the 37th Tank Battalion, became the subject of a major counterattack by German armor. Leach fought throughout the freewheeling engagement that ensued. In the largest tank battles fought between German and American forces, the 4th Armored Division conducted a mobile defense, outmaneuvering and outfighting the Germans. German losses proved staggering and the fighting at Arracourt became a model for the effective employment of armor on the defense.

In the weeks following Arracourt, offensive operations by the 4th Armored Division gradually came to a halt, despite another well known fight at Singling that again involved the 37th Tank Battalion. There, Leach was again wounded and sent to the rear to recover. When the Battle of the Bulge opened, he was still receiving medical care. However, when the 4th Armored Division was dispatched to counterattack the Germans and relieve Bastogne, Leach left the hospital and raced across ice-covered roads in a jeep to rejoin his company. He resumed command and participated in the fighting that resulted in Bastogne's relief. Leach

was among the first tank units to reach the beleaguered town and kept a path into the town open for the rest of the 4th Armored Division units. For his actions during the Battle of the Bulge, Leach received the Distinguished Service Cross. He continued to lead his company for the rest of the war, fighting his way into and across Germany. By the time of the German surrender in May 1945, he had been awarded the Purple Heart five times for wounds received since landing in the Normandy beachhead.

After the war, Leach remained in the Army. He saw service in Korea on the island of Cheju, where he employed his diplomatic skills to calm a populace incensed by their abuse and, in some cases, mandatory service with the Japanese army during the war. However, Leach did not see combat during the Korean War. Instead, he served in Europe, helping to protect the Federal Republic of Germany from Warsaw Pact aggression in the early years of the Cold War. These years saw his maturation as an armor officer. In 1951, he married his wife, Marion, who became dedicated to supporting the military in her own right, supporting military families coping with the stresses and deployments associated with Army life. To help Army spouses in particular, she coauthored the work *What Every Army Wife Should Know*.

In the 1960s, Leach deployed to Southeast Asia as an adviser to the South Vietnamese army. He served throughout the Vietnam War. As a full colonel, he became the 40th commander of the 11th Armored Cavalry Regiment in 1969. The regiment's operations soon reflected Leach's aggressive style of command and demonstrated the effectiveness of armored cavalry in counterinsurgency operations. Leach led his regiment during Operation Montana Raider, which helped to destroy much of the supporting organization and infrastructure of the Viet Cong in the targeted area. The operation saw Leach's armored cavalry regiment effectively operating in jungle terrain. Leach and his staff also coordinated the actions of attached mechanized infantry, air mobile infantry, helicopters, artillery, and South Vietnamese soldiers. In the process, he overcame significant logistics constraints.

After his tenure in Vietnam, Leach became the chief of the armor branch, responsible for the branch's personnel affairs. In this capacity, he managed a portfolio of some 6,000 officers. His diligence on behalf of individuals earned him recognition and respect from officers who later rose to senior leader positions, including General Frederick M. Franks Jr., whom he helped to remain on active service after losing a limb in Vietnam. However, Leach's willingness to support individual soldiers and advance their cause, if he felt it was the right thing to do, did little to advance his own career. When he defended a junior officer who had run afoul of a senior commander, Leach's own chances to attain the rank of a general officer ended.

Leach retired from the Army in 1972, but quickly began a new career with Teledyne where he remained until 1985. However,



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he continued to support the military in various capacities. Living in South Carolina, he became that state's military adviser to the adjutant general, responsible for overseeing National Guard affairs. In 1987, the Armor Center made him an honorary professor of armor in recognition of his support for armor training, including a regular presentation on the battle of Arracourt to new company commanders. His instruction provided insights into armored operations from World War II through Vietnam. For veterans, he remained a vibrant force, working to create a U.S. armored forces monument near Arlington National Cemetery. At the time of his death, he was leading an effort to expand the Beaufort National Cemetery in South Carolina; yet, he always remained dedicated to the men who served with him in World War II. He remembered the name of every soldier in Company B, 37th Tank Battalion until his last day. He also visited the battlefields in Europe where he had fought, leaving memorial markers to those same soldiers.

With his passing, James H. Leach leaves a legacy of lifetime dedication to a military that shines as an example for others who place service before self.



NOTE

Material for this biographical sketch came from Patrick Donohue, "Heart Attack Claims James Leach, Decorated Veteran, Advocate for Military," *Beaufort Gazette*, December 17, 2009, article posted on website last accessed on January 22, 2010 at <http://www.islandpacket.com/1482/story/1074124.html>; "First Honorary Professors Named," *ARMOR*, November-December 1987, p. 8; "James Leach Death Notice: James Leach's Obituary," *Charleston Post & Courier*, December 19, 2009, article posted on website, last accessed on January 22, 2010 at <http://www.legacy.com/obituaries/charleston/obituary.aspx?n=james-leach&pid=137464793>; COL James H. Leach, LTC James L. Dozier, LTC Glenn G. Finkbinder, and LTG George I. Forsythe, "Montana Raider: Mobility in the Jungle — Classroom for Tomorrow?" *ARMOR*, September-October 1971, pp. 4-14; and Matthew Hermes, Ph.D., "Tanker Jimmie Leach: One of Patton's Last WWII Tank Commanders Tells His Story of War and Service," excerpts from a manuscript under preparation, last accessed from website on January 25, 2010 at <http://jimmieleach.us/index.html>.

On Monday, the 17th Day of May 2010, at 1000 hours, the U.S. Army Armor Center and School, will honor Colonel Jimmie Leach in a wreath-laying ceremony, to be held at the 11th Armored Cavalry Monument at the Patton Museum, Fort Knox, Kentucky.

Colonel Leach dedicated his life to serving his Nation, and as we pay tribute to this great man, we also pay tribute to the service of his generation, one made up of proud, strong, and humbled men who "chose to serve."

Please join us as we honor the proud legacy of Colonel Leach and veterans from the "greatest generation" to the "latest generation."

"The willingness with which our young people will fight in any war, no matter how justified, shall be directly proportional as to how they perceive the veterans of earlier wars were treated and appreciated by their country."

— General George Washington

2010 Armor Warfighting Conference and Armor Trainer Update

17 - 20 May 2010

“Mounted Warriors: Honoring the Legacy, Spearheading the Future”

The U.S. Army Armor Center is pleased to host the 2010 Armor Warfighting Conference at Fort Knox, Kentucky. The theme for this year's conference is “Mounted Warriors: Honoring the Legacy, Spearheading the Future.” Two days of regimental association reunion activities will precede the conference.

The 2010 conference will bring together the global armor and cavalry community for a week of education, debate, and exchange. We have a dynamic and varied agenda; Major General Milano and Command Sergeant Major Troxell have invited several of the Army's top leaders to speak as subject-matter experts on current and future operations for the force. Battalion commanders and command sergeants major are encouraged to attend. It is vital to the future of our force for these leaders to use their unique positions to carry back information gathered at the conference to their soldiers.

This year's conference focuses on the past, present, and future of the armor and cavalry force. Guest speakers include top maneuver leaders from U.S. Army Forces Command (FORSCOM),

the Combined Arms Center (CAC), U.S. Army Training and Doctrine Command (TRADOC), Installation Management Command (IMCOM), the National Training Center (NTC), I Corps, and 25th Infantry Division. Conference topics will include doctrinal updates, equipping issues from TRADOC capabilities managers, and special topics such as air-ground integration, full-spectrum operations, and the Base Realignment and Closure (BRAC) move to Fort Benning. Finally, we will hear from the Vice Chief of Staff of the Army (VCSA).

As always, the conference is packed full of social events, which include the commanding general's garden party, Stable Call at the Patton Museum, a golf tournament, and the static vehicle and vendor displays at Skidgel Hall.

The Armor Warfighting Conference is a great opportunity for the armor and cavalry community to celebrate its achievements as the greatest mounted combat force in history. For more information please visit the Fort Knox website at:

www.knox.army.mil/armorconf/

Regimental Association Reunion Tentative Agenda

TIME	EVENT	LOCATION
Saturday, 15 May		
0830-1800	Patton Museum open for tours	
0830-1800	Oral History Interviews	Patton Museum (Conference Room)
0900-1130	Bus Tour of Fort Knox	Begins at Patton Museum
1215-1330	Lunch at Dining Facility	TBD
1300-1800	Hooray for Heroes	Radcliff, KY
Sunday, 16 May		
0830-1800	Patton Museum open for tours	
0830-UTC	Regimental Association Internal Activities	
1200-1630	Golf Tournament	Lindsey Golf Course
1300-1700	Registration	Leaders Club (St. George Room)

2010 Armor Warfighting Conference Tentative Agenda

Monday, 17 May		
0830-1630	Registration	Leaders Club
0830-1200	External Unit Scheduling Conference	Oliver Theater
0830-1200	Armor Trainer Update (ATU)	Leaders Club (Candlelight Room)
0830-1630	Vendor Displays	Skidgel Hall
1000-1030	Colonel Leach Memorial	11th ACR Monument, Patton Museum
1040-1100	Commanding General's Welcome	Patton Museum (Abrams Auditorium)
1100-1130	Maneuver Center of Excellence (MCOE)/Base Realignment and Closure (BRAC) Update	Patton Museum (Abrams Auditorium)
1200-1330	Regimental Reunion Barbecue	Bingo Hall (Keyes Park)
1200-1600	14th Annual Armor Golf Classic	Lindsey Golf Course
1315-1530	Engagement Skills Trainer (EST)/Close Combat Tactical Trainer (CCTT) Tours	EST and CCTT
1800-1830	Reunion Punch Bowl Ceremony	Patton Museum
1800-2200	Stable Call/ATU Social	Patton Museum

Tuesday, 18 May		
TIME	EVENT	LOCATION
0830-1630	Registration	Leaders Club (St. George Room)
0830-1630	Vendor Displays	Skidgel Hall
0830-0900	Commanding General's Welcome	Waybur
0830-1700	Combatives Tournament	Natcher Gym
0900-1000	Maneuver Center of Excellence Update	Waybur
1000-1045	I Corps Lessons Learned	Waybur
1100-1350	Brigade and Battalion Commanders Meeting and Lunch*	Leaders Club (Regimental Room)
1030-1500	Master Gunner Working Group	Boudinot Hall
1030-1630	Command Sergeants Major Update and Lunch*	Leaders Club (Candlelight Room)
1200-1500	Honorary Colonels and Command Sergeants Major of the Regiment Meeting and Lunch*	Leaders Club (Lincoln Room)
1400-1445	Commanding General, FORSCOM - Army Force Generation (ARFORGEN)	Waybur
1500-1545	Strategies for Training Full-Spectrum Operations (FSO)	Waybur
1600-1645	Capabilities Development Integration Directorate (CDID) Update	Waybur
1645-1715	Armor Association Meeting	Waybur
1800-UTC	Commanding General's Garden Party	Quarters One
Wednesday, 19 May		
0830-1630	Vendor Displays	Skidgel Hall
0830-0930	Installation Management Command (IMCOM) Commander	Waybur
0830-1700	Combatives Tournament	Natcher Gym
0945-1045	VCSA - Protecting the Force	Waybur
1100-1200	Guest Speaker (TBA)	Waybur
1200-1300	Commanding General's Training Panel Luncheon*	Leaders Club (Bullion Room)
1315-1415	NTC Update: Armor and Cavalry Rotational Trends	Waybur
1430-1530	CAC-T - Integrated Training Environment (ITE) and Army Training Network (ATN)	Waybur
1545-1645	Sergeant Major of the Army Update on the Noncommissioned Officer Corps	Waybur
1800-2100	Armor Association Gold Medallion Banquet	Leaders Club (Candlelight Room)
Thursday, 20 May		
0630-0800	Armor Association Executive Council Meeting*	Leaders Club
0830-0930	TRADOC Commanding General - Transformation into an Enterprise	Waybur
0930-1000	Franks Award	Waybur
1015-1100	Army Enterprise Update	Waybur
1100-1115	Commanding General's Closing Remarks	Waybur
1800-2100	Combatives Tournament Finals	Natcher Gym

* Indicates an "invitation only" event.

An expanded schedule will be available at registration and up-to-date information is available at the Armor Warfighting Conference website: www.knox.army.mil/armorconf/

Event	POC	Phone*
Armor Conference armor.conference@conus.army.mil	LTC Mark Reeves SFC Wayne Cason	(502) 624-4087 (502) 624-4846
Armor Trainer Update	MAJ Brian Wilkins	(502) 624-1472
CSM Update	MSG Brian Caponi	(502) 624-3305
External Scheduling Conference	Bob Stubblefield	(502) 624-2591
Vendor Displays	CPT Eric Anderson SFC Wayne Cason	(502) 624-4327 (502) 624-4846
Armor Association	Mark Gavula	(502) 942-8624
VIP Billeting	Reservations Desk	(502) 624-6180
Lodging	Reservations Desk	(502) 943-1000
* DSN Prefix: 464		

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