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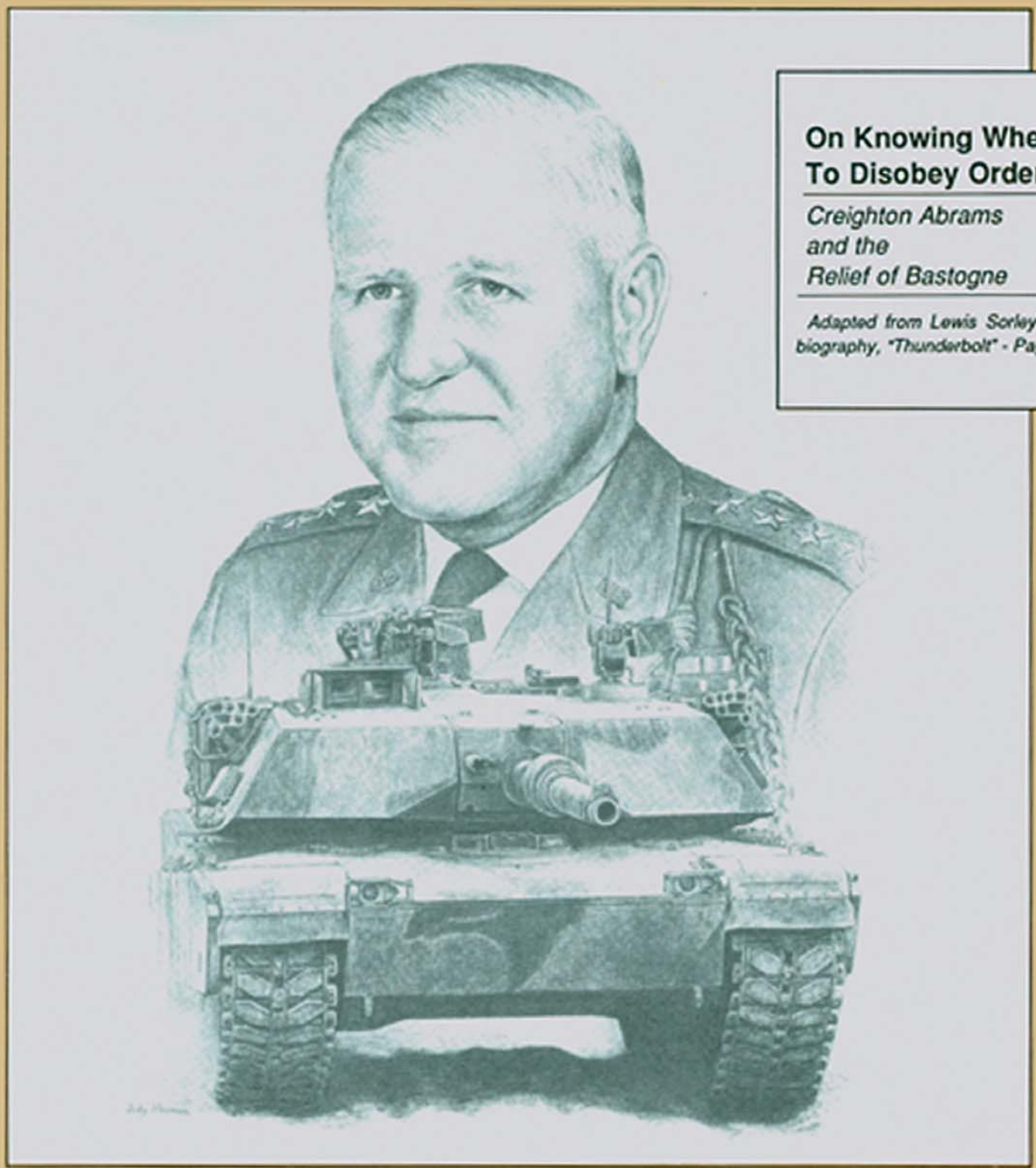

On Knowing When To Disobey Orders:

Creighton Abrams and the Relief of Bastogne

Adapted from Lewis Sorley's new biography, "Thunderbolt" - Page 6

PB 17-19-5

September-October 1992

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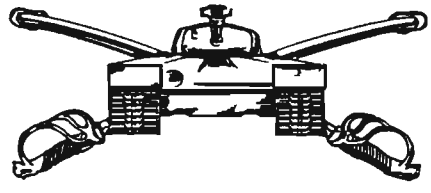
The U.N. Security Council is busy planning to use "all necessary means" — including military force — to deliver humanitarian aid to the war-ravaged people of Bosnia-Herzegovina. While General Scowcroft has indicated the primary U.S. role might come in the form of air power, the professional Armor soldier cannot help but watch with apprehension as this situation in Europe worsens.

Thirty divisions of Adolf Hitler's army were unable to overcome the resistance of these Eastern European ethnic groups during World War II, and the potential for a bloody, protracted struggle concerns every soldier from private to general.

U.S. Special Forces face the threat of gangs of armed bandits, warring clans, and anarchy as they guard shipments of food to the starving people of Somalia.

But Bosnia-Herzegovina and Somalia are only two of some two dozen volatile situations that could someday involve Armor soldiers. Our swift, decisive victory in the Gulf War must not lull us into a sense of complacency; each trooper must recommit to maintaining a training edge and honing his skills to be ready to deploy and fight anywhere in the world.

Yet, even as we watch these world events unfold, many of our colleagues will become civilians, and the chorus of political leaders will continue to sing out for even deeper defense cuts. Those of us who remain in this smaller, leaner Army must turn our sights toward the future. We must begin now to project the needs and capabilities of Armor in the 21st century. But it is not enough only to anticipate requirements for hardware, deployment, or ordnance — we must anticipate the *leadership* requirements for the future with a zeal equal to that of force development.



One of the characteristics of American military leadership has always been the value placed on each soldier's life. With a shrinking Army and an eroding budget, that value increases. In the 2000s, we must spend each soldier's life like we would our last dollar — carefully, reluctantly, and only if we're convinced we can't get what we want some other way. It's the human dimension of force structure that will see us through the lean years to come and grant us victory on the fields of the 21st century.

With a view toward defining Armor leadership, this issue features an excerpt from Lewis Sorley's biography of Creighton Abrams and some thought-provoking comments from the Chief of Armor about an unsung Armor leader, Major General John S. Wood.

Since a leader's eyes and ears are his scouts, be sure to read about how we train scouts for the force, and spend a few moments entertaining the debate on how we get to the fight in the future.

— J. D. Brewer

By Order of the Secretary of the Army:

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General, United States Army
Chief of Staff

Official:

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Secretary of the Army

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LETTERS

"Attitudinal Obstacles" And the Reserve Component

Dear Sir:

I read both COL Molinari's letter and MAJ Jones' article (January-Febuary 1992 issue) on Reserve Component training with both interest and concern. I did find several of their initiatives potentially useful in the training of RC units. These include:

•The commitment of AC units to the training support role to allow RC units to be involved in the training, not doing the training.

•The revision of the leadership development program for the RC NCOs.

I am concerned because the tenor of both COL Molinari's response to my letter and MAJ Jones' article smack of what COL Dave Shaver calls "the attitudinal obstacles which make change painful: (1) Superiority complex, AC to RC; (2) benign neglect; (3) intolerance; and (4) a general lack of confidence in the abilities of reservists, especially at unit level." (from *Closing Ranks: The Secret of Army Active and Reserve Component Harmony,* published by the Strategic Study Institute, Carlisle Barracks, Pa.)

I stand by my belief, as stated in my letters to the editors of both the *Army Times* (14 October 1991) and *ARMOR* (January-February 1992), where I argued that there was a need to adopt a long-term plan for the development of qualified combined arms leaders in the Reserve Components. I suggested that "such a plan would pick up today with an emphasis on individual, crew,

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and platoon proficiency and would culminate five years from now with each maneuver team starting a repetitive process that would see them undergoing a two-week, NTC-type experience at the company team level. Thereafter, every three to five years, that company would repeat the process of train-up, followed by an intensive training evaluation at a company-level Reserve Component Training Center. In this manner, we would be requiring the company team commander, through simulations, self and schoolhouse study, and hands-on experience to learn to manage and lead the various combined arms elements of the combined arms team."

What I was suggesting is in total agreement with the Chief of Staff of the Army's views, as stated in his November 1991 *Military Review* article.

MAJ Jones' article talks about many, probably useful, manuals that are to be developed and programs that are to be created. **But** it doesn't lay out a **challenging** long-term program that will excite the RC tankers to excel. It tells them that there are going to do Tank Tables VII, XII, and platoon STXs almost for the rest of their lives. As such, it does not lay out a long-term training goal. It also does not seem to appreciate the utility of simultaneous-multi-echeloned training, and it only pays lip service to the concept of the Mission Essential Task List (METL).

True, in a contingency environment, it is difficult to develop METL. However, at the platoon and company level, there are two basic tasks at which a unit must be proficient — attacking and defending. In other words, maybe there is a need to pare down the nine platoon missions and 59 combat critical tasks. Additionally, nowhere do they highlight the criticality of battle drills! In my opinion, battle drills are key to overcoming crew turbulence. At the platoon level, 98 percent of what a platoon does should be a prerehearsed drill. About 75 percent of a company team's missions are a series of changing battle drills that are orchestrated by the team commander. Once this is recognized and stressed in training, we will handle many of our training problems. These two missions were clearly highlighted in my proposed training plan that culminated in a visit to the RCTC.

The concepts suggested also do not exploit technology. They seem to rely on outdated IDT training concepts. If weekly drills were scheduled on a 24-hour clock, a crew could accomplish a lot in a COFT. In a week's time, an entire company could conduct eight hours of training in a single COFT. Additionally, excess time is devoted to tank gunnery. We, the members of the Armor community, have never maximized our use of the training time during a gunnery density. We focus on the process of putting rounds down range and the AAR, and not the remedial and additional training that could be conducted. I have seen units where the COFTs were employed 24 hours a day. During gunnery densities, crews were sent to the COFT to work out specific problems that were discerned during the AAR process (remedial training). Additionally, non-firing time was used by platoon leaders for rehearsals of Platoon Kills Battalion (PKB) — a 1/60-scale range, and Brewster devices were also used to rehearse PKB. There are a lot of innovative things that can be done, and, frankly, the cookbook nature of MAJ Jones' article seems to eliminate them.

The smaller, more stable (Active and Reserve) Army should see a reduction in crew turbulence, thus reducing the need for retraining. The thrust of both the letter and the article seem to suggest a 100-percent "forget curve" and a very gradual learning curve, coupled with little being learned during AIT, the Basic Course, etc. The solution lies in a mix of battle drill emphasis, time management, the use of simulation devices, the setting of long-term goals, and turbulence reduction. One might ask how the Israeli Reserve forces have maintained their combat edge and see if we can emulate it.

Finally, I am concerned that neither COL Molinari nor MAJ Jones grasped the importance of hands-on leadership experience at the company command level. If captains are not given the opportunity to "fight" their companies, they will never be able to fight battalions if called upon to do so. I would suggest that the Armor School relook its concepts in light of the above and the CSA's *Military Review* article.

Obviously, both the letter and article hit nerves, and I hope that their authors won't take the above critique personally. What we have begun is the needed dialogue on how to improve the training readiness of the Reserve Component mobile warriors. This is an extremely important issue to which no one has the total answer. Hopefully, many of your other readers will pick up the gauntlet that has been thrown down, and through the resulting dialogue, we will all learn and readiness will be enhanced.

ARMOR is to be commended for beginning this useful discussion.

BRUCE B.G. CLARKE
COL, Armor
Carlisle, Pa.

Ironing Out RC Problems

Dear Sir:

This letter is in response to SSG Schneider's letter in the May-June 1992 issue. While I agree with some of the points expressed, I disagree as follows:

The breakdown of equipment is something that can be resolved by proper PMCS before, during, and after use. By forwarding properly completed 2404s for faults through the proper channels, items can be repaired or replaced. If it is beyond troop or squadron level, it can be referred to direct support units.

Even though the M60A3 is not the most modern equipment, it is still an effective piece of equipment and can put steel on target. The Marine Corps does not have the A3 version and is presently upgrading from M60s to M1s.

M60A3 master gunner courses are available for National Guard and Reserve units through Camp Shelby, Miss. It is the duty and responsibility of units to send people to the course. Upon completion, these new master gunners can help to train and improve the unit's effectiveness with their M60A3 equipment.

As to soldiers attending schools, with the current requirements for promotion and advancement, it is imperative that individuals attend the MOS and educational schools. By attending these schools, the soldiers learn the skills necessary to train and motivate their fellow soldiers. Additionally, with the downsizing of National Guard and Reserve units, it is of the upmost importance that the soldier attend and graduate from MOS and educational schools.

Weekend drills cannot, and should not, be cut down to one day. Weekend drills provide the units the time to accomplish other tasks mandated in smalls arms qualification, civil disturbance, and NBC training.

It would be great if all of a unit's equipment could be located at its armory, but unless your unit is located on a military base or a state military reservation, there is not enough space or facilities for the proper storage of the equipment.

I agree that gunnery should be fired during annual training. I feel that an additional MUTA 6 should be scheduled each year to fire Tank Tables VII and VIII. As it presently stands, gunnery is fired every other year after a maneuver training period. When not firing, units should make use of the MCOFT or UCOFT. These COFTs help

Continued on Page 39

MG Paul E. Funk
Commanding General
U.S. Army Armor Center

A Model for Leadership Traits, LTG John J. Yeosock Reflected MG John Wood's Style in WWII

Although I still have many on active duty, one of my heroes retired the other day — LTG John J. Yeosock embodied many of the characteristics which we in our Army have stood for but which, often, we don't attain. I believe that a leader from our past who was much like Yeosock was MG John Wood, and we have written about him here, today. For those of you who know Yeosock, pull out those traits which match Wood's. You'll find a close match.

Throughout the history of armor, some of our best combat leaders have gotten the least notice in the press. Perhaps this is because they spent the majority of their time leading and caring for soldiers, leaving little opportunity for media grandstanding. Major General John Shirley Wood was one such leader. His understanding of the combat role of armor during its infancy allowed his division, the 4th Armored, to reach unparalleled heights of military accomplishment during World War II; and his near-prophetic vision of what future combat would require became fundamental to shaping our modern armor force. But it was his dynamic, inspirational leadership that had made General Wood (nicknamed "P" Wood for his tutorship of fellow cadets at USMA) a template of competent combat command that modern officers and NCOs would profit from overlaying on their careers.

A selfless leader, "P" Wood never demanded of his soldiers that which he was unwilling to do himself, be it moving to the front to engage the Nazis, or keeping top buttons fastened and sleeves rolled down for training discipline in the Mojave Desert. The stories of John S. Wood standing up to superiors who generated stupid ideas, or needlessly risked soldiers' lives, are now legend. For Wood, also known and feared by the Germans as "Tiger Jack," the fundamental quality required to be an effective armor leader was *human understanding*. Rather than maintaining the cold, aloof facade present in so many of his colleagues, he believed that a commander could and should communicate to his subordinates "...warmth, understanding, sympathy, compassion ... the intangible essence of human comprehension that emanated from Lee and from Washington."

Because he believed in soldiers, and his soldiers believed in him, teamwork became the mainstay of the Fighting Fourth. Instead of encourag-

While Wood expected his troops to train with perfection as their goal, he still allowed his subordinate leaders to make mistakes and learn from them — but never the same mistake.

ing competition between elements of his command, Major General Wood operated under the motto, "All for one and one for all."

Wood said, "The only goal must be perfection ... in attaining the standards set by the commander, perfection in team play, perfection in concerted and combined action — and every man must be convinced that he is personally responsible for it."

This was a leader constantly gathering his soldiers around him in groups and telling them how proud he was of them and how he trusted their judgement and initiative. By extending his intense personal pride to every unit and every soldier in his command, he guaranteed their concerted effort. The result was a unit that did not want to let the "Old Man" down — an outfit that believed it could accomplish anything. The bold, decisive thrust of the 4th Armored Division through France and Germany in 1944 and 1945 supports that belief.

While Wood expected his troops to train with perfection as their goal, he still allowed his subordinate leaders to make mistakes and learn from them — but never the *same* mistake; and his advice on the precious trust they held is worthy of the modern armor leader's consideration.

According to Wood, "You may have only eight, or even thousands of men in your unit, but always remember — each one has a mother, father, perhaps a wife and children. They want that soldier home, after this war ends! So, you invest them carefully — lead them, don't just order them!"

Just as "Tiger Jack" always looked ahead to the next objective while pounding the Germans in Normandy, he also kept one eye scanning the requirements of the future, believing that when a leader fails to look ahead, he is, in fact, falling behind. Accurately anticipating the challenges and mission for the armor force of the 90's, he still believed that the individual soldier was "the ultimate weapon."

Wood wrote, "[In] future war[s] there will not be time for the mobilization and training of large forces such as was possible in former wars. Sufficient force must be available from the start to prevent disaster, and they must be kept in a state of combat readiness. This requires constant leadership of the highest quality."

I've also just finished reading Bob Sorley's book on General Abrams — (*superb* effort) — and that reminded me that LTG John J. Yeosock is *certainly* one of those who always wanted to just do a good job "without worrying about who got the credit." Selflessness and superb intellect — two great leaders, Wood and Yeosock. We couldn't go wrong in venerating and following the lead of these two great soldiers.

FY 93 Armor Trainer Update Slated

FY 93 Armor Trainer Update (ATU) is scheduled for 18-21 November 1992 at the U.S. Army Armor Center and Fort Knox, Fort Knox, Ky. Registration will be held in Gaffey Hall on 18 November 1992, followed by 2½ days of conference and open forum. This conference will provide information to RC Armor officers and NCOs on safety, leader development, training, doctrine, organization, materiel, and mission support. Armor and cavalry officers and NCOs who are in National Guard units and U.S. Army Reserve forces, and personnel who work in related areas, should attend this update.

All personnel who plan to attend FY 93 ATU should preregister by contacting Ms. Cheryl Hawkins or Mr. Troy Schaffner at DSN 464-7114/1543 or commercial (502) 624-7114/1543. Questions may be left on a 24-hour answering machine at DSN 464-TANK. Additionally, questions may be called in to the Armor Hotline through the use of our toll free number (1-800-525-6848). Written requests for FY 93 ATU information may be obtained from the Fort Knox points of contact at the following address: Commander, U.S. Army Armor Center, ATTN: ATZK-TFR, Fort Knox, Ky. 40121-5000.

On Knowing When to Disobey Orders: Creighton Abrams and the Relief of Bastogne

by Lewis Sorley

(Adapted from the forthcoming *Thunderbolt: General Creighton Abrams and the Army of His Times*, to be published in September by Simon & Schuster. An audio version will be brought out simultaneously by "Books on Tape.")

The Belgian village of Bastogne, after the struggle.

As Lieutenant Colonel Creighton W. Abrams, commanding the 37th Tank Battalion of the 4th Armored Division, had demonstrated in the summer and autumn campaigns of 1944, his exceptional tactical acumen was coupled with an unparalleled sense of pace, timing, and the use of terrain. He also had a sense of urgency, of the need to press on past the point of exhaustion in order to fully exploit successes against the enemy. He told his troops over and over again that the shortest road home was east.

The battalion was thus headed east, as usual, in early December. Then, without warning, the Germans launched one last great attack in the Ardennes, scene of so much bloody fighting over the course of history. What came to be popularly known as the "Battle of the Bulge" was underway.

Much of the drama of the ensuing days focused on Bastogne, where the 101st Airborne Division and elements of other U.S. units were cut off and surrounded by superior German forces. They held on gallantly while desperate efforts were made by the 4th Armored to punch through to them. The 37th Tank Battalion was then fighting in the Saar, some 125 miles from Bastogne, with its companies attached to infantry regiments of an adjoining division. On 19 December came orders to report to their parent outfit, and so off they went, joining the columns being readied to slam into the southern flank of the German advance, into the belly of the Bulge.

After a long road march north, moving into the attack, the first objective was a town called Flatzbourhof. At this point, the 37th Tank, along with the 53rd Armored Infantry, formed the maneuver elements of the 4th Armored Division's Reserve Command (CCR). Combat Command A and Combat Command B, the lead fighting elements of the division in the configuration of the moment, were attacking on parallel tracks, CCA on the right working along the main Arlon-Bastogne road and CCB on the left using secondary roads to keep abreast.

When these two columns got bogged down, Reserve Command, customarily used only for resting up various elements, was committed to help out the stalled units. An immediate concern was a large body of German armor reported moving on the exposed right flank of CCA. Major General Hugh Gaffey, now commanding 4th Armored Division, ordered Colonel Wendell Blanchard to deploy Reserve Command as a balanced task force (based on Abrams' 37th Tank and the 53rd Armored Infantry under Lieutenant Colonel "Jigger" Jaques, supported by Lieutenant Colonel Robert Parker's 94th Armored Field Artillery). He pointed them toward the town of Bigonville. But first there was Flatzbourhof.

* * *

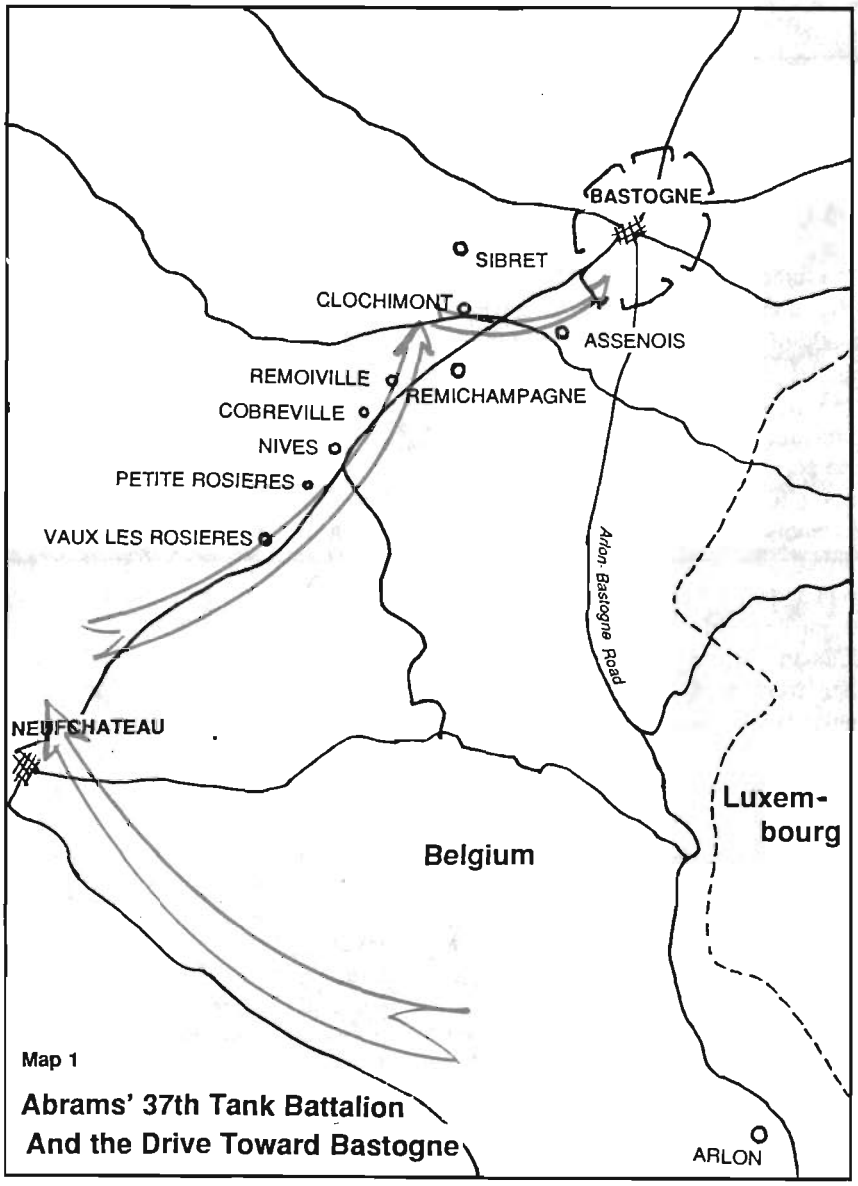
There was hard fighting at these two towns, and it soon became apparent that getting to Bastogne was going to be quite a challenge. Along the way Task Force Abrams received a number of replacements, and these men were immediately integrated into the tank crews. The extra help was ex-

tremely welcome because, even though the battalion was down to only twenty-one operational tanks at this point, it was still so short of crewmen that some of the tanks were without bow gunners. Meanwhile the division received a message from the besieged 101st Airborne in Bastogne: "There is only one more shopping day before Christmas!"

It was nearly dark by the time tanks and infantry moved through to secure the high ground beyond Bigonville. By then it was Christmas Eve, but there was to be no rest. Shortly before midnight, Abrams gave orders to get ready to move again. Reserve Command was to march around to the division's left flank for an attack on Bastogne from a different direction. That night, Patton wrote in his diary: "This has been a very bad Christmas Eve. All along our line we have received violent counterattacks, one of which forced... the 4th Armored back some miles with the loss of ten tanks."[1]

On the far side of Bigonville, CCR had been counting prisoners and (even though it was midnight) making plans for Christmas dinner when the orders came: move to Neufchateau (southwest of Bastogne, and some 60 miles down and around the rest of the division and on the opposite flank) at once. CCR was underway an hour later. As it approached Neufchateau, further orders came: continue the attack around the left flank of the division to relieve Bastogne.

Thus, in a matter of perhaps 72 hours, the elements of Reserve Command had trailed along in reserve, attacked on the axis of one of the leading combat commands, moved to the extreme right flank of the division to ward off a heavy enemy armor formation, withdrawn from that position to the division rear, and swung all the way around to the left flank to attack again toward Bastogne. It was cold, it was wet, it was slippery, and (probably) by this time, they were damned mad as well. So much the worse for the Germans. It was also Christmas Day.



Map 1
Abrams' 37th Tank Battalion And the Drive Toward Bastogne

The attack was planned along an axis defined by successive towns to be assaulted en route to Bastogne, beginning with Vaux-les-Rosieres, Petite Rosieres, Nives, and Cobreville. The force worked its way through this first set of objectives in only two hours. On the far side of Cobreville, the column was held up by a blown bridge and a large crater. A bulldozer tank was ordered forward and quickly reduced the obstacle by pushing a nearby stone wall into the crater. In three-quarters of an hour, the advance continued to the next objective, Remoiville, which was cleared in a rush as a tank company and an infantry company roared in with all guns firing, taking more than three hundred prisoners in the process. Outposting the town, the task force spent Christmas night in these positions.[2]

By day's end, CCR was only six miles from Bastogne. That night Abrams planned the next day's attack. First was to be an advance on Remichampagne. Clochimont would be next, then Sibret, which was thought to be full of Germans and the likely site of the main battle.

As it turned out, Remichampagne was easy. A large number of P-47s unexpectedly turned up and bombed hell out of it only a few hundred yards

in front of the advancing tanks. Captain William Dwight, the 37th Tank's liaison officer, thought "the coordination of tanks, infantry, artillery, and air was to perfection." On to Clochimont.

By noon, Abrams was on a ridge south of that town, a small Belgian hamlet three miles from Bastogne. Here he deployed his tanks with care, protecting the flanks and sending out one company to locate any enemy that might be in the vicinity of Sibret or Assenois. As the lead company deployed overlooking the town, Abrams joined them on the position, and the infantry closed in behind. German soldiers in slit trenches not 50 yards to their front were plugging away at the tanks with Panzerfausts. Eventually, Abrams' force captured them all.

By then it was midafternoon, well after three o'clock. The orders were to continue the attack to seize Sibret. But that town was going to be well defended. The 37th had been seriously understrength in tanks when the battle began and was now down to only 20 Shermans left in the whole battalion, scarcely more than a company would normally have. In fact, CCB of the 10th Armored Division had about twice as many medium tanks inside Bastogne as Abrams had trying to break through to them. His accompanying armored infantry battalion was short more than two hundred men. It was going to be getting dark soon; the shortest day of the year had only just gone by, and sunset would occur at about 4:30 p.m., with dusk ending less than 40 minutes later.

Abrams and Jacqes stood by the side of the road. From there they could see hundreds of cargo planes parachuting supplies into Bastogne. Finally Abrams turned to Jacqes: "Let's try a dash through Assenois straight into Bastogne."

Abrams and Jaques didn't check with anyone about this switch in plans. The CCR commander was weak, later observed Brigadier General Hal Pattison, former Army Chief of Military History, and if Abrams had called and asked for the change in mission, he would probably have been denied. "Not too many... commanders over the course of history...," said Pattison, "have had the courage to make the right decision in the face of the wrong orders." Pattison thought there wasn't any question but that, tactically, Abrams did the right thing, also demonstrating in the course of it the moral courage that so strongly marked him. Besides, "the combat commander hadn't been anywhere near the action all day long, and he [Abrams] was in a far better position to assess what should and shouldn't be done...."[3]

Abrams and Jacqes stood by the side of the road. From there they could see hundreds of cargo planes parachuting supplies into Bastogne. Finally Abrams turned to Jacqes: "Let's try a dash through Assenois straight into Bastogne."

Apparently, Abrams did the right thing logistically as well. As one of his company commanders later observed, "When we went into Bastogne, thank God for his computation of the mileage and planning... or we would have never made it. We were just about out of ammunition and no time to resupply. And we had to take advantage of the success that we had there."

Once the decision had been made, Abrams cranked up Captain Dwight. Get the tanks and infantry moving, he instructed, and contact the artillery. Dwight was given command of the two companies that were going to lead the way — one tank and one armored infantry. Heavy artillery concentrations were laid on Assenois. "This is it!" Abrams told Dwight, and at 4:10 p.m. the column moved out, tanks in the lead.[4] Before they jumped off, Abrams had talked with Boggess. "I mounted his tank that afternoon and we studied a well-worn battle map," Boggess recalled. Abrams pointed out to him the secondary road leading to Bastogne through Assenois, and explained that there had been no recon work done on the road, but it was known that all this area was held by the enemy. If we could get through on this road, it might work for a surprise attack." Then "he gave me his familiar short and explicit order, which [in this case] was simply, 'Get to those men in Bastogne'." Boggess quickly briefed his tank commanders, then "Colonel Abrams gave us the familiar hand signal, and we started to roll toward Bastogne."

Boggess, in the first tank, was thinking about all the Germans in Clochimont and in Assenois, both abutting the road into Bastogne. Beyond Assenois, the road ran up a ridge and through some heavy woods, and there were plenty of Germans in there, too. The road might be mined, and the bridge at Assenois might be blown, and the Germans might have antitank guns zeroed in on the road. And Boggess had only nine tanks in his whole company, plus the one more commanded by Captain Dwight. But then the charge began, and Boggess didn't have time to think about these things any more. He took them in fast, throttles open and all guns firing, trying to bust through before the enemy had time to react.

Artillery fire from 13 batteries crashed down on Assenois. The tanks and half-tracks followed so closely in its wake that scarcely a shot was fired at them as they roared through the town. The four lead tanks made it through safely. But a half-track right behind them took a direct hit from its own artillery support, and farther back, a half-track was pinned by a falling telephone pole. The remainder of the column was forced to a halt on the narrow road. Abrams and his crew leapt from their tank and wrestled the telephone pole aside, freeing the trapped half-track, as accompanying infantry exchanged fire with German snipers. Back in his tank, Abrams waved the column forward once more.

In the smoke and dust that now covered the town, it was nearly dark, and

two tanks made a wrong turn. A half-track got into the tank column by mistake. Under the still incoming artillery fire the infantry leapt from their vehicles to find shelter in nearby buildings, and a ferocious hand-to-hand fight with the German garrison was soon underway. So fierce was the fighting that the infantry was unable to disengage to continue toward Bastogne with the tanks, as had been planned. So, leaving the infantry to deal with Assenois, the tank column pressed on in the direction of Bastogne.

Driving through and beyond Assenois, three tanks were in the lead, then the interloping half-track, followed by two more tanks. Spraying machine-gun fire into the woods and across the road ahead, the relief column approached a square concrete blockhouse. Boggess had his gunner pump three shells into it. Then, said Boggess, "I saw the enemy in confusion on both sides of the road. Obviously, they were surprised by an entry on this road, as some were standing in a chow line. They fell like dominoes." Abrams had been right.

Then Boggess spotted some foxholes with what looked like men in American uniforms. He called out to them, "and finally an officer emerged from the nearest foxhole and approached the tank. He reached up a hand, and with a smile said, 'I'm Lt. Webster of the 326th Engineers, 101st Airborne Division. Glad to see you'." It was 4:50 p.m. and getting dark on the day after Christmas, 1944.

"And as dusk started to come down," a *Yank* magazine correspondent reported, "Col. Abrams rode through — a short stocky man with sharp features — already a legendary figure in this war."

"It was a daring thing and well done," Patton told his diary.[5] To his wife Beatrice, he wrote that "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."[6] Wrote Army historian Hugh Cole: "There was recognition in both camps that 26 December had been the day of decision."[7] Even so, simply linking up was not, in itself, enough. Initially, only four tanks had entered the Bastogne perimeter. Now the corridor had to be kept open, but the CCR commander ordered the whole combat command to move on into Bastogne. Abrams thought that was a bad idea, that the line from Remoiville to Remichampagne to Clochimont to Assenois ought to be manned to secure the corridor leading into Bastogne.

When Colonel Blanchard passed the word he wanted everything moved into Bastogne to Major Eddy Bautz, the 37th Tank's S-3, in Abrams' command post, Bautz replied, "We can't do that." But Blanchard insisted, so Bautz got Abrams on the radio and told him. "Hell, no," said Abrams. For the second time in a single battle, he was ignoring orders and following his tactical instincts. "Just keep those units where they are."

So they did just that, Bautz taking the battalion's trains and the headquarters into Bastogne and leaving the tanks and infantry outposting the vital road for which they had fought so hard. As soon as the infantry finished the job in Assenois, a very tough fight, word was passed that the road was safe for administrative traffic. By then it was 3:00 a.m. Immediately there came, from the rear, a whole column of ambulances and supply trucks to replenish the besieged troops and evacuate the wounded. During the night, the 37th Tank's light tank company escorted 70 ambulances and 40 supply trucks into the perimeter.

Later someone observed that the 4th Armored Division had a much greater reputation than any other armored division in the war, and Brigadier General William Roberts (who served in the division, after commanding some of the armored elements that were bottled up in Bastogne with the 101st) was asked what made the difference. "Abrams," he replied. "Abrams, when he got into combat, knew everything that was going on. How he knew it, nobody knew, but he did. He knew where every tank was. He knew where every piece of equipment was, and he was able to command and move his outfit and always defeated the enemy in front of him. It was just that simple." That, and the moral courage to disobey orders when necessary to accomplish the mission.

Notes

[1] *The Patton Papers*, p. 605.

[2] This account is based primarily on Abrams and others, Combat Interview; and Capt. William Dwight, Combat Interview, 4th Armored Division World War II Operations Reports, Box 24093, Record Group 94, National Archives.

[3] It seems clear that it was the decision to strike for Bastogne directly (rather than detour through Sibret) that was an independent decision on the part of the commanders on the scene, not whether to attack at all. In Patton's diary, for example, he entered on 26 December the following: "At 1400, Gaffey phoned to say that if I authorized the risk, he thought that... Colonel Wendell Blanchard could break through to Bastogne by a rapid advance. I told him to try it. At 1845, they made contact, and Bastogne was liberated." *The Patton Papers*, p. 607. John Toland indicates that Abrams had radioed Gaffey (his division commander, and two levels above him in the chain of command, with Blanchard as CCR commander in between) for permission to attack directly into Bastogne rather than take Sibret first, and that this precipitated Gaffey's call to Patton. See Toland's *Battle: The Story of the Bulge*, p. 281. None of Abrams' close associates are aware of any such contact between Abrams and Gaffey.

[4] Dwight confirmed that the battalion never got an order to go into Bastogne: Abrams said, 'We're going in now.' I was standing right beside him." Bautz agrees: "I never heard an order from higher headquarters for us to move into Bastogne."

[5] *The Patton Papers*, p. 607.

[6] Ibid, p. 608.

[7] *The Ardennes*, p. 673.

General Donn A. Starry's review of this new biography of General Abrams appears in this issue on page 50.

Growing Scouts

by Lieutenant Colonel Michael Matheny

And then there was light — lots of light and loud voices. The first day of real training for the new scout has begun. At 0530 hours, the drill sergeants descend on the rooms and welcome the new trainees to the Army. By 0545 hours, the trainees are in the semblance of a formation dressed for PT. For 50 minutes, the drills roam up and down the platoons, attempting to "soldierize" the new recruits while introducing them to physical training. After chow, they fall into a training routine that generally begins at 0900 and runs until 1730 or the completion of training. For these young men, gone now are the days of leisurely wake ups, wild weekends, and the immediate comfort of family and friends. They are now committed to a strange new life, calling for self-discipline, responsibility, and teamwork. They have begun the process of becoming soldiers — cavalrymen. This is OSUT — One Station Unit Training. This is Fort Knox, 1st Armor Training Brigade, the 5th Squadron, 15th Regiment of Cavalry, the place where the Army grows scouts.

The Mission

Fifth Squadron, 15th Cavalry Regiment conducts one station unit training (OSUT) for initial entry and reclassified 19DD3/19D Bradley, M113 Cavalry Scouts, soldiers in the Regular Army, Army Reserves, and the National Guard.

Clearly, we must provide the Army a highly motivated, physically fit, and well trained scout. He must be trained not only in basic soldiering skills, but specific scout skills, capable of serving with any cavalry organization, regardless of how equipped. This process requires 15 weeks for the 19DD3 scout and 13 weeks for the 19D scout. The transition from civilian to soldier to scout is a product of quality recruits, a new training philosophy, and great execution.

The New Scouts

They come from all over the United States. It is unusual if a training troop does not have more than 30 states represented in one cycle. The quality of the new soldiers is first rate. Almost all the recruits are high school graduates, with a good number having some college experience. The average trainee in our most recent cycle is 20 years old with 12.4 years of education. They come into the Army for many different reasons — college money, to get a job, or the traditional "just to get away from home." Coming from a self-oriented society, one of our most important missions is to get them to acknowledge that there are things more important than self — buddy, unit, country. This process starts immediately.

Within a few days of their arrival, they are gathered together and addressed by their squadron commander. The colonel proudly and loudly announces that they are now members of the last squadron of the 15th Regiment of Cavalry. He further impresses upon them that they are now the heirs to the soldiers who rode down the Shenandoah with Sheridan, drove into Bastogne with Abrams and Patton, and are now following in the footsteps of all the other heroes who served in the last 200 years. As he warms to his subject, talking of challenges and sacrifice, undoubtedly more than a few of the new soldiers contemplate with mixed emotions their original decision to hold up their right hand and answer yes. They are sustained in these first few troublesome days by an insistent drill sergeant, fear of failure, and their battle buddy.

As soon as they arrive, each soldier is assigned a buddy. The battle buddy is friend, cheerleader, and helper. The trainees must quickly draw strength from each other to meet the challenges, which come fast. Perhaps the greatest challenge for many is physical fitness. Trainees may report to basic training with four percent more body fat than that allowed in AR 600-9. It is not unusual to receive trainees as much as 30 pounds overweight. They may be smart, but like most of their civilian counterparts, they are often out of shape. The baby fat quickly melts away with daily PT, roadmarches, runs, and a schedule crammed with training six days a week. In summary, the new scouts are smart, self-oriented, and frequently out of shape.

Certainly, not all of those who climb off the bus and file into the barracks are cut out to be soldiers. Most of the attrition occurs in the first few weeks as the inherent stress, both physical and emotional, sort out those who can't adjust. Additionally, some who make it through the screening process are actually medically unqualified. Over the last two years, the attrition rate for scouts has steadily declined from 12 percent to six percent. Perhaps the best explanation for this trend is the quality of the new recruits. But a new philosophy and better training also help to keep the trainees turned on to soldiering.

Training Philosophy

Each soldier comes with his own expectations of what the Army will be

like. Expectations molded by Hollywood, or tall tales told by veteran relatives and friends, often cause a good deal of initial anxiety. Beginning in the late 1980s, TRADOC began a series of initiatives which put most of the Hollywood versions of basic training firmly in the past. Drill sergeants are selected and managed by Department of the Army. They receive monthly incentive pay of $275 to help compensate for the long hours involved in their two-year tours. TRADOC's Initial Entry Training Strategy now emphasizes the insist/assist philosophy — insist on standards and assist the soldier in achieving them. The goal is to allow stress between the new soldier and the task, not the trainee and the drill sergeant. The emphasis here is on letting the drills use the same kind of leadership that earned them their stripes in the field Army.

Initial entry training (IET) progresses through a phased course that begins with total control of the trainee and his environment by the drill sergeant. There is a gradual lessening of control throughout the course, until the trainee's environment and responsibilities approximate those of his first assignment. If the new soldier can stick it out in the first few weeks, he can generally make it to graduation.

Key to the new philosophy of training is the increased role for the drill sergeant. Training is done by platoon, and everywhere possible the platoon sergeants do the training. Currently, there are 191 Skill Level One tasks taught in 19DD3 OSUT. Of that number, 79 are taught by drills, 43 by the squadron's track commanders, and the remainder by 1st Brigade's Training Group. The new scout proceeds through four phases of training, each ending with a test of his skills. Although most of the basic training skills are clustered in Phases I and II, OSUT allows the new soldiers to get their hands on the equipment early. Putting their hands on the big machines reinforces their image of themselves as cavalrymen and combat soldiers. This breaks the rigor of basic training and allows them to glimpse the end of a dark tunnel. It can reignite their interest. Phases III and IV concentrate on scout skills and vehicle-specific training.

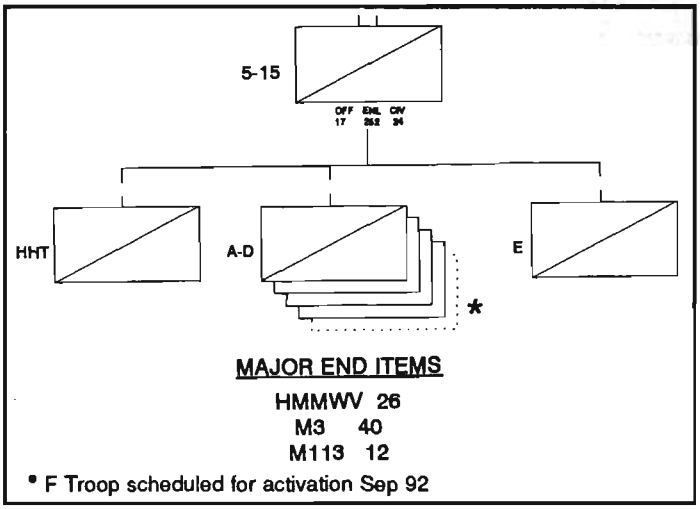


Figure 1. Organization of the 5-15 CAV

Training Organization

At Fort Knox, the new soldiers are processed into the Army at the 46th AG Reception Battalion. Within 96 hours, they are shipped to Disney Barracks, the home of the 1st Armor Training Brigade, affectionately known as Disneyland. Once off the buses and into the barracks, the aspiring young 19Ds belong to the 5-15 CAV. The size of the squadron is determined by the number of scouts that need to be trained in the next fiscal year. Currently, the squadron is organized (see Figure 1) with a headquarters troop and five line troops. An austere organization, the squadron has an authorized strength of 17 officers and 252 enlisted men. Four of the line troops, A-D, train Bradley scouts, while the fifth troop, Echo, trains M113 National Guard scouts.

Regardless of size, the squadron keeps busy and, in fact, does just about everything a TO&E squadron does except deploy. In terms of equipment, the squadron maintains 40 Bradleys, 26 HMMWVs, 12 M113s, and a small fleet of support vehicles. The maximum fill for a training troop is 165 privates, so the squadron can easily swell to 1,000 soldiers. The sole focus of the squadron is training, and we certainly do a lot of it. In the last fiscal year, the CAV put down range over 680,000 5.56-mm (M16) and 108,637 25-mm rounds. Statistics on other calibers such as 7.62-mm, .50 cal., and blank ammunition, are equally impressive.

Since each training cycle concludes with a Gun/Field Week, the squadron is also frequently in the field. Last year our troopers spent over 140 days in the field. Everybody gets their share of the heat, the cold, the mud, and the bugs.

In addition to training new scouts, our Mission Essential Task List also includes sustaining our own warfighting skills and training/supporting the Army Reserve. The squadron runs a semi-annual gunnery program through Bradley Table VIII. Staff rides, TEWTS, CPXs, and the normal run of both officer and noncommissioned officer development programs help to hone warrior skills. Proximity to ICOFT and SIMNET facilities assist in keeping current. The heart and soul of the organization, however, centers on METL ONE, "Train IET soldiers to 19D standards."

Quality Training

The battle tasks for the squadron focus our efforts and describe the major training which each new scout receives.

First Aid
NBC
Basic Rifle Marksmanship
Physical Fitness
Engineer Tasks

Driver Training
Communications
U.S. Weapons
Individual Tactical Training
Intelligence Training
Gunnery

The scout you receive from Fort Knox is trained as a driver and as an observer. As a driver, he should be able to perform PMCS on both the Bradley and the HMMWV. Each soldier drives for approximately 18 miles, including tactical and formation driving. Training on the HMMWV has recently been expanded from four to 12 hours. Whether in the HMMWV or Bradley, the scout driver should know what defilade is and how to achieve it.

As an observer, he should be able to establish an OP/LP, call for fire, and send a spot report. Communications training includes operation of a TA-1, TA-312, and VRC-77 series radio. Trainees also receive a two-hour introduction to SINGARS.

Intelligence training should also help ensure accuracy in spot reporting. Threat identification has recently been retooled to portray a more realistic picture. Additionally, there are some new initiatives to introduce fratricide prevention at this level during the friendly recognition class.

New scouts receive 26 hours of land navigation. This training is an introduction to the use of compass, map, and terrain association. Their ability to get around on the ground with map and compass is weak. The course is much more successful in instilling basic engineering skills. Each new scout should be able to emplace or disarm the M15, M19, and M21 antitank mine. Demolition training includes constructing electric and nonelectric firing systems for use with plastic explosives.

To defend himself, the new scout is qualified on his M16 rifle. Additionally, the new soldier is trained to operate the M60 machine gun, M203, AT4, and the Claymore mine.

By the end of their first week, they take the Basic Physical Fitness Test. The drills then sort out the trainees into ability groups and pick up the pace. Over the course of the next 13 weeks, they will do thousands of push-ups in the pursuit of upper body strength. Groans from aching stomach muscles and the smell of liniment for sore feet fills the barracks. Although the general goal is overall fitness, the aim is clearly on passing the APFT in their 13th week of training. Almost all PT failures are the result of the trainees' inability to reach the minimum standard for push-ups. Once this major hurdle is overcome, it's pack the troop up, lock, stock, and barrel — on to the field.

In the 14th week, they head for the woods in a style most of us readily recognize. It begins with gunnery. Familiarization gunnery with the Bradley weapon system is packaged in a modified Table VI A and B. The gunnery program focuses on driver skills. The instructors emphasize target acquisition and emerging from defilade to engage targets. Fast starts and rough stops generally take some time to smooth out. Following gunnery, the troop moves to an assembly area and puts on its war paint. The troop begins a series of situational training exercises (see figures 2, 3, and 4). Each platoon rotates through an STX lane every 24 hours. In the mounted training, each platoon spends the morning conducting advanced tactical driving. The new scouts move in and out of the driver's seat, practicing movement techniques, terrain driving, and seeking defilade. In the afternoon, and in some cases into the evening, they execute reconnaissance missions.

The senior drill sergeant issues a warning order, conducts a precombat inspection (PCI), and then gathers the lads around for the operations order. They rehearse the operation, and then the new scout platoon launches into the mission. The Bradley platoon conducts a zone reconnaissance. The HMWWV platoon conducts a route reconnaissance, and the dismounted platoon moves off as a recon patrol to reconnoiter a specific area. We use MILES equipment to ensure realism and keep the soldiers fired up about training. The training concludes with a "by the book" after-action review. We focus on Skill Level One tasks, but within a completely tactical context. PCIs, rehearsals, MILES, and AARs are all aimed at providing the new soldiers with a familiar training environment once they reach their new assignment.

Gun/field week concludes with Cavalry Stakes. This end-of-course test samples all the skills the trainees have mastered and ensures a degree of retention. Out of the field and on to the wash rack, the troop recovers and prepares for out-processing. The day before they graduate, they muster out of the barracks for one last PT challenge — the squadron commander's run. In the early morning darkness for about five miles, the new scouts double time around the back roads of the 1st Brigade. As they near the squadron headquarters upon their return and gear down to quick time, a tremendous sense of achievement

DAY	1ST PLT	2ND PLT	3RD PLT	4TH PLT
1	ICOFT	ICOFT	ICOFT	ICOFT
2	M3 GNRY	SUPPORT	REINF. TNG	
3	REINF. TNG	M3 GNRY	SUPPORT	1/3 ATCH EA PLT
4	SUPPORT	REINF. TNG	M3 GNRY	
5	RGE DETAIL	PATROLLING	AA OPS	HMMWV STX
6	HMMWV STX	AA OPS	PATROLLING	M3 STX
7	M3 STX	HMMWV STX	AA OPS	PATROLLING
8	PATROLLING	M3 STX	HMMWV STX	AA OPS
9	AA OPS		M3 STX	CAV STAKES
10	CAV STAKES	1/3 ATCH EA PLT	AA OPS	ROADMARCH
11	ROADMARCH		CAV STAKES	RECOVERY
12	RECOVERY	RECOVERY	ROADMARCH	RECOVERY

Figure 2. Gunnery/Field Week Execution Matrix

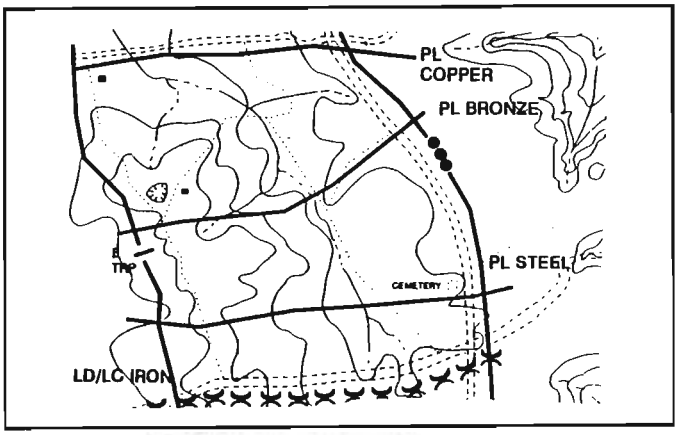


Figure 3. Bradley STX Zone Recon

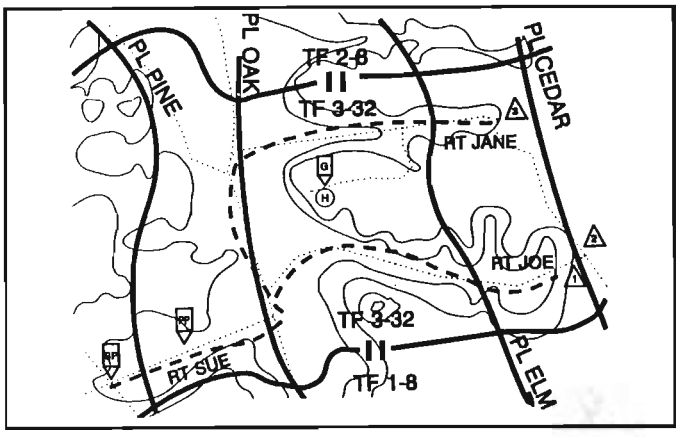


Figure 4. HMMWV STX Route Recon

swells their cadence into a final HOOAH!

The end result of all this is a new scout proud of himself and generally fired up about soldiering. Not only is he proud, but so, too, are his family members. We send out invitations to parents and wives to attend their new scout's graduation. A Troop, with 130 soldiers, can generate as many as 300 loved ones, all gathered for the grand event. Some come thousands of miles, from all over the United States. Far West, deep South, they represent all points of the compass. The Army is built on tradition and, inasmuch as everything in OSUT is a training event, graduation is also built around tradition. The night before their last formation, the troop stands retreat by the brigade flagpole. The history of retreat is read while the families look on their young men. Some of these new soldiers look completely recast in the eyes of their admiring parents. They stand tall, thinner, disciplined, with a sense of purpose unknown in earlier days.

These are always emotional moments for me, as they surely must be for all parents who have also served. A quick look can always reveal the old veterans among the families. They stiffen with the very first note of retreat. Some salute or just put their hands over their hearts. The pride is visible, in themselves, but mostly in their sons. The torch is passed — a new generation bears arms.

Graduation comes, and how like a microcosm of the military experience it is. Families embrace after long weeks of separation. Pride and sorrow mix with the sure knowledge that tomorrow brings yet more separation and challenging duty. But the essential truth is that, for many of these new soldiers, the Army has helped them discover self-discipline, responsibility, and teamwork. These traits will ensure success in life long after the uniform is hung in the closet. For the cadre soldiers of the squadron, we have touched these mens' lives, provided the force with great cavalrymen, and perhaps, if only for an afternoon, the Army has really embraced the nation it defends.

The Future

As the Army changes, so must the training base. In the past year, the 1st Training Brigade has cased the colors on two battalions and one squadron. The 4th Basic Training Brigade has also cased its colors and its units have merged into the 1st Brigade. The impact on cavalry is simply that now only one squadron provides scouts to the field. The squadron must continue to find the most effective ways to train the new cavalrymen to meet the needs of the force.

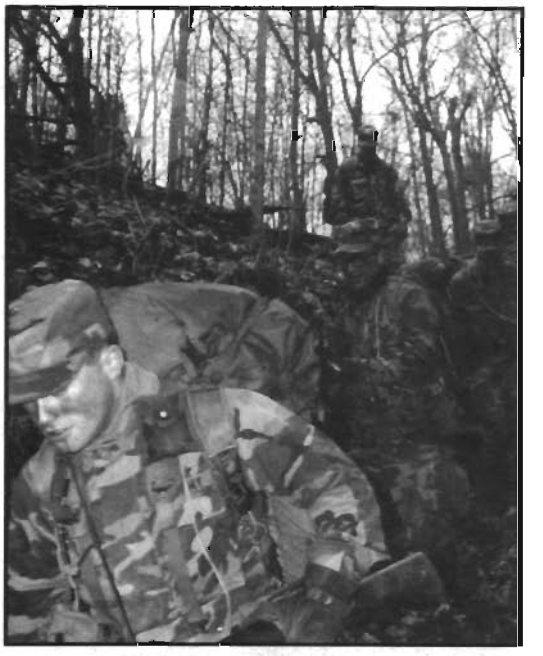
Currently, three out of every five graduates of 19DD3 OSUT go to Bradley-equipped units. As the scout platoons of armor/mech battalions become equipped with HMMWVs, the majority of our new scouts will work with wheeled vehicles. Now, we train each of our new scouts on both Bradleys and HMMWVs, so they can be assigned to either type unit. Force structure changes and cost may well argue for the development of HMMWV OSUT in the near future. If this happens, the challenge to the Army will be to track and assign the right scout to the right unit.

One thing is certain — the Army will continue to change in the coming decade. Undoubtedly, our philosophy, organization, and method of training new soldiers will also reflect changes in the total Army. Amidst this change there will be one constant, however, the continuing mission of Fort Knox to grow the scouts who will lead the Army now and in the future.

Lieutenant Colonel Mike Matheny commands 5th Squadron, 15th Cavalry. He has served as a tactical planner with the III Corps and 1st Cavalry Division at Ft. Hood; XO, 3d Battalion, 32d Armor; operations officer, 1st Battalion, 64th Armor; commander, A Company, 1st Battalion, 64th Company; and tank platoon leader and company XO, A Company, 4th Battalion, 69th Armor. He has served as a history instructor at the U.S. Military Academy and at the U.S. Army Armor School. LTC Matheny is a 1972 graduate of the University of Dayton and holds an MA Degree from Wright State University and an MMAS Degree from the Army Command and Staff College.

New Course at Fort Knox Trains Dismounted Scouts

by Captain Harold L. Meyer Jr.
and Sergeant First Class Aaron Speakman



...Into the Vaultonian Forest...

Wet, dirty, and exhausted, 45 heavily laden soldiers collapse into a loose perimeter after emerging from the dark Vaultonian forest. While the platoon leader makes final coordination for their rearward passage of lines, the platoon sergeant begins his duties: cross-leveling ammunition, checking weapons and equipment, and dropping an encouraging word when needed. These men have spent the last 15 hours tracking Vaultonian guerrillas along the border between the tiny Caribbean island countries of Vaulton and Corsica. The Vaultonian guerrillas are tough, resourceful fighters, but the squad's raid was successful. One destroyed weapons cache later, the men are ready to rest and rearm. Tomorrow night's mission is an ambush on a known guerrilla patrol route...

This little story sounds realistic. Indeed, it is realistic to the men on the patrol. This is not a scene from a pulpy war novel; however, it is a description of how some Armor/Cavalry soldiers are training right now at Fort Knox. Known as the Dismounted Armor Scout Course, it is quickly changing the training landscape at the home of Armor.

A New Course To Fix an Old Problem

Dismounted Armor Scout Course (DASC) is most likely a new term for most tankers and cavalrymen. It is a course that we run in the 2d Squadron, 12th Cavalry, and it is specifically designed to train Armor soldiers in leadership using dismounted tactics. Originally conceived as a way to boost the graduation rate of Armor lieutenants attending Ranger School, it has since evolved into an excellent training medium for all Armor soldiers from the ranks of specialist to captain.

DASC did not exist until January 1992. It is the brainchild of Colonel Joseph Sutton, then commander of 12th Cavalry Regiment, and was fully supported by Major General Foley, then Chief of Armor. In August 1991, the Ranger School graduation rate for Armor lieutenants had fallen below 45 percent. This low rate was the result of a number of factors, the most important the haphazard training these lieutenants were receiving prior to their departure for Fort Benning. At that time, lieutenants in the Armor Officer Basic Course (AOBC) were trained in small groups by Ranger-qualified captains attending the Armor Officer Advanced Course (AOAC). This system had worked fairly well for many years, but by last August, the increasing difficulty of AOAC was putting a strain on the captain instructors. Quite simply, they no longer had the time to provide quality instruction, and preparing the lieutenants for Ranger School took the back burner.

After identifying the problem, it was decided to centralize the pre-Ranger training. Colonel Sutton directed me to craft and orchestrate a training event that would bring the lieutenants up to speed and boost their Ranger School graduation rate. I selected Sergeant First Class Aaron Speakman, a Ranger-qualified 11B then working in the Fort Knox Land Navigation Department, as my NCOIC for this task. A few weeks later, Sergeant First Class Speakman and I unveiled what we called the "100-Hour FTX." This intensive four-day field problem would not only instruct the Ranger candidates on small unit tactics and planning, but it would give them an all important insight as to what Ranger School is all about — before they got there. All lieutenants that desired to attend Ranger School were required to participate in the 100-Hour FTX. The fact that we conducted the FTX during the AOBC Christmas break earned me more than a few curses.

Despite the acrimony, the 100-Hour FTX went off as planned in early January 1992. The training was everything FM 25-100 requires — challenging, realistic and stressful. The Ranger candidates were rotated through leadership positions as their squads and platoons executed every mission they would see at Ranger School, from the reconnaissance patrol to the raid and the ambush. The regimental commander reviewed the training and ordered me to build a course around it.

The Program of Instruction — Short But Intense

DASC consists of three distinct phases;. the Preparation Phase, City Week, and Field Week (the 100-Hour FTX). The Preparation Phase is three days of intensive physical training and testing that not only cuts out those with little desire but, more importantly, it constitutes the first part of each candidate's overall score in DASC. Actually, the candidates will have been working and training long before this first phase. Lieutenants in AOBC must still participate in a special Ranger/Airborne PT program (now called DASC Phase I), and enlisted men who attend DASC are given two days of specialized instruction in patrol planning immediately before the first phase of the course. The Preparation Phase is the equalizer that brings everyone to the same level before the real training begins.

The City Week is six days long. It consists of 18-hour days of classroom instruction followed by an 18-hour, cadre-led patrol. During the City Week, the candidates learn how to operate and employ small arms and crew-served weapons, as well as how to plan and execute the standard dismounted patrolling missions. Planning is stressed, and the candidates use the same Bay Planning concept that is used by the Ranger School. The cadre-led FTX shows the candidates what a patrol looks like in operation, and prepares them for the final phase of DASC, in which they will have to assume the leadership role.

DASC is concluded by the now famous 100-Hour FTX. This field problem is entirely dismounted, and ties all the lessons learned in the preceding two phases into one package. The candidates must plan, coordinate, and execute patrols in a simulated combat environment, using the fictional Caribbean island of Capronia as a scenario. The stress level is kept high by an unending series of problems, as well as the standard hurdles of limited sleep and food. Most importantly, each candidate is given the opportunity to perform in a leadership role at least twice. He is evaluated and counseled after each mission, and weak performers receive extra opportunities to learn. This phase is the most important link in each candidate's overall DASC score, which is the deciding factor in who will receive the coveted slots at Ranger School.

Quite Simply — It Works

Originally developed to reform the once haphazard instruction given to Ranger candidates, DASC has grown into a separate and distinct course of instruction. DASC students no longer must plan to attend Ranger School, but merely have a desire to improve their abilities in dismounted tactics and small unit leadership. In the best traditions of FM 25-100, DASC is safe, controlled, highly stressful training that is probably the finest school today, outside of Ranger School, for teaching our scouts the lost art of dismounted reconnaissance. Through DASC, we are providing units with motivated soldiers, well-trained in dismounted patrolling.

Further, DASC has proven that dismounted training is good training, even for tankers and cavalrymen. Besides being inexpensive in terms of resources and training areas, it is realistic and stressful. It provides an arena where leaders can be built at the most basic level. Whatever the reason, though, it seems to be working. So far, every graduate of DASC who wanted to go to Ranger School has been able to go, and I hope to be able to maintain that standard. Graduates from DASC and the original 100-Hour FTX have been earning Ranger tabs at a rate of 88 percent — almost twice the rate when the program began last October. At the bottom line, you can't argue with success.

A few hours have passed. A new squad leader and assistant squad leader have taken their place and planned the ambush patrol. The men have had time to clean their weapons, draw more ammunition, and maybe eat an MRE or grab some sleep. As night falls again, the patrol slips through the friendly lines to lock horns with the Vaultonian guerrillas again. One more mission done, one more step toward the tab.

Tentative FY93

DASC Schedule

Class	Dates
001	4-21 Nov 92
002	2-19 Dec 92
003	13-30 Jan 93
004	3-20 Feb 93
005	3-20 Mar 93
006	7-24 Apr 93
007	12-29 May 93
008	9-26 Jun 93
009	7-24 Jul 93
010	8-25 Sep 93

Captain Harold L. Meyer Jr. was commissioned in 1984 from Iowa State University. He has served in a number of Cavalry and Armor positions, including tank platoon leader, scout platoon leader, assistant battalion S3 and armor observer controller at the Joint Readiness Training Center at Fort Chaffee, Ark. He commanded B Troop, 2/12 Cavalry at Fort Knox before taking his present command at D Troop, 5/12 Cavalry.

Sergeant First Class Aaron Speakman enlisted and attended basic training at Fort Knox in 1976. Originally a mortarman, he changed his MOS to 11B in 1983. He has held positions as squad leader, platoon sergeant, platoon leader, drill sergeant, and operations sergeant. He is presently assigned to B Troop, 2/12 Cavalry as the NCOIC of DASC.

Supported by Corps armor, Marines advance during Operation ARIZONA, near Da Nang, in the summer of 1967.

A Light Tap With a Strong Arm

Doctrine and Employment of Marine Corps Armor From 1965 to 1975

by Captain Steven L. Parrish, USMC

As the Marine Corps entered the 1960s, its mission seemed clear. The enemy of the United States was obviously the Soviet Union and its satellite nations, or those trained and equipped by them. Europe was deep into a cold war, and the U.S. Army bore the responsibility of preparedness for a large scale war with the Soviets. The Marine Corps, however, turned its attention to preparing to fight those smaller Soviet satellite nations and the nations of the world equipped and trained by the Soviets.

From 1965 through 1975, the structure and doctrine of the Marine Corps changed from preparedness to fight a Soviet trained and equipped national army to fighting in the jungles of Southeast Asia, and back again. The rhetoric, however, remained the same throughout the period: "light forces able to be airlifted or landed from shipping into the battle area to secure advanced naval bases."

Naturally, this impacted on the structure and doctrine of Marine armored forces. The Marine Corps struggled throughout the period with the numbers and types of armor it needed to fulfill its mission, and how to use that armor. The Marine Corps would find that the period of 1965-1975 brought changes in its armored force composition, but little improvement in its employment.

In 1961, the commandant of the Marine Corps focused the Corps on "fighting the limited or conventional war, where nuclear weapons may not be used." The Corps was experiencing a period of "helicopter intoxication" in the early sixties. The helicopter had proven its value in Korea, and the newer, faster helicopters, capable of lifting greater payloads, presented an entirely new avenue for the Marine Corps' rapid build-up of combat power ashore. Naturally, this ruled out the employment of armor in the same echelon as the helibourne forces. Marine Corps' armor doctrine was that, once brought ashore by naval forces, the tank was used as combat support

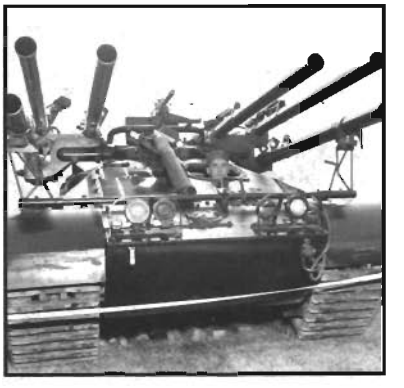
to add additional firepower to the infantry, destroy fortifications, defeat armor units, provide additional artillery, aid in pursuit, and execute spoiling attacks.

On March 8, 1965, 3d Platoon, Company C, 3d Antitank Battalion rolled ashore at Red Beach 2, Da Nang, Republic of Vietnam, in support of Battalion Landing Team 3/9. It was the first Marine armored unit in Vietnam, and the beginning of a long period of Marine Corps' misuse and misunderstanding of armored vehicles.

In 1965, the Marine tank battalion consisted of a battalion headquarters which had two M48A3 tanks and nine flame tanks, two medium tank companies with 17 M48 tanks, and one heavy tank company with 17 M103 tanks. The three Marine tank battalions began the year training for the conventional war in which they expected to see armor employed. In February through March, for example, 1st Tank Battalion was supporting Operation SILVER LANCE with the 13th Marine Amphibious Brigade (MEB). April found 2d Tank Battalion supporting 1st Battalion, Eighth Marine Regiment in Operation SNOWFEX at Camp Drum, N.Y., and Company C, 1st Tank Battalion had just completed testing and acceptance of its new M103A2 120-mm heavy tanks. Although the United States and the Marine Corps was now involved in the small but continuous actions in Vietnam, Marine tankers felt safely insulated from the infantryman's war.

Third Tank Battalion, however, became a part of the war in March of that year. Augmented with the light antitank vehicle M50A1 Ontos, 3d Tank Battalion rolled ashore on 8 March 1965, at Da Nang, Vietnam, to assist in the defense of the perimeter of the airbase. Although the M48 was used as infantry support, tanks also found themselves stationed about as mobile pillboxes. This employment as infantry support positioned the tank as a function of the gun, not its mobility,

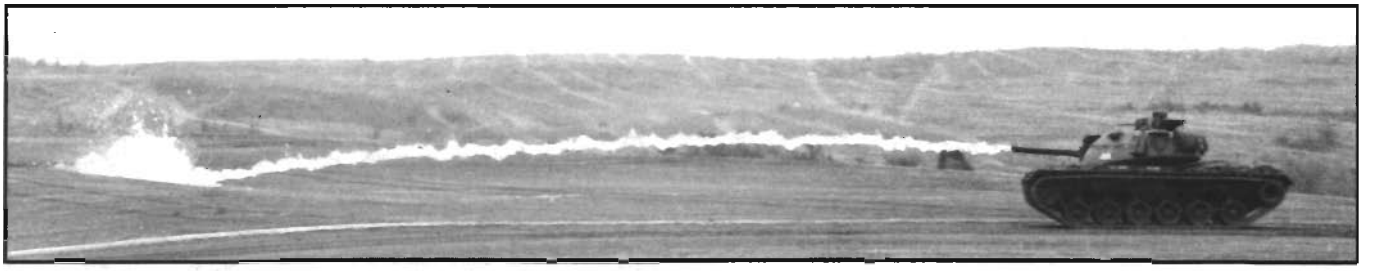
Marine Armor in the Vietnam Era



In top photo, an M48A3 , mainstay of Marine armor in Vietnam, plows through a field during Operation MACON, near Dong Ban Dong in July 1966.

The Corps' M103 heavy tanks, with 5-member crews and a 120-mm main gun, at right, were not deployed to Vietnam.

The M50A1 Ontos, with six 106-mm recoilless rifles, was a light antitank vehicle useful for bunker busting, but its drawbacks eventually caused it to be phased out. Reliability problems, and the occasional accidental discharge, cut its tour short.



which typified Marine doctrine in that period.

In 1965, the Corps' doctrine called for the tank being used for support in the attack, support in the defense, support of reaction operations, outpost and strongpoint operations, "Rough Rider" convoy security, and indirect fire. In all of these operations, the standard task organization divided up a tank battalion, with a company assigned to support each infantry regiment. The regiments, in turn, would "chop" tank platoons out to infantry battalions. Infantry battalions would assign the platoon to an infantry company and this might often see tank platoons divided into two or three-tank sections to operate independently, supporting infantry platoons. This piecemeal assignment of tanks never allowed Marine armor to employ the shock and firepower that is the main attribute of mass tank formations in combat.

In support of the infantry attack, terrain severely limited the employment of tanks. Vietnam's jungles, flooded rice paddies, and hilly wooded areas never fully permitted the use of armor in the rolling attack. As a rule of thumb, each tank had an infantry squad assigned to it for security from dismounted attacks by hand-held anti-tank weapons. Often, the tank was used to attack with the infantry on a single axis, traveling at the same speed as the infantry. This was easily controlled by the infantry commander and provided instant fire-support. Tanks also provided a base of fire from another position while the infantry attacked. Another method of employment was reconnaissance by fire, in which tanks led the movement of the infantry, firing ahead of the movement to draw out enemy ambushes and defensive positions. Infantry often rode on the tanks during offensive combat operations, further limiting the tank's ability to shoot its main gun and move rapidly in the attack.

In support of the defense, the tank was more closely employed in the same method as today. Tanks were usually positioned with infantry protection, but also with interlocking and mutually supporting firing positions. The Xenon searchlight on the M48A3 provided the infantry with the ability to fight a limited night battle as well. Azimuth and elevation indicators on the gun allowed the tank to provide reasonably accurate fires at night.

In reaction operations, tanks assigned to infantry units, usually in company strength, provided quick aid to forces decisively engaged with the enemy. This mission required the infantry to ride on the tank, since it was the quickest and most survivable method of transportation. As a result, this severely limited the use of the tank's firepower and mobility, and exposed infantry to small arms fire. However, the tank's survivability against mines and its communications capability made this the preferred method.

The conduct of outpost and strongpoint operations found Marine tanks being used as pillboxes and gun emplacements. Tanks often sat and overwatched key terrain, roads, trails, or ambush sites, closely coordinated with preplanned artillery and infantry fires. From these operations Marines coined the phrase: "Two on the ridge, three on the bridge." It was a fairly uneventful and vulnerable mission.

"Rough Rider" security was an assignment as motor transport convoy security. Often road bound, the tank again found itself unable to use its mobility. Its survivability to mines, its firepower, and the ability to withstand artillery and mortar fire, made it the favorite to lead convoys through the Vietnam countryside. Flame tanks often accompanied the medium tank to burn the brush from the side of the road.

Indirect fire was an unpopular assignment for tankers. The flat trajectory of the 90-mm gun made the tank ill-suited for this mission, but the tank did carry the equipment to provide this service. The tank was particularly used for harassment and interdiction fires since its indirect fires were inaccurate and the small ammunition availability limited the sustainment of the fires.

Search and destroy missions were often employed in Vietnam, to locate enemy forces, installations, supplies and equipment. Seizure and holding of terrain was less important since, once the enemy was defeated in an area, he usually returned to a operations base. Tanks provided a number of benefits to the infantry. It would destroy booby traps with its track, detonate mines, and, when contact was made, it could sustain small arms fire allowing the infantry to deploy and engage the enemy. In dense jungle, the tank could break trails, which moved the infantry along faster than hacking through the jungle. Tanks paid a heavy price for these operations. Visibility was often limited to only a few feet, and the enemy employed RPGs. The early model RPG-2 was largely ineffective against the M48A3 tank, although some were damaged. The later model RPG-2 could penetrate the armor at most any point and was more effective.

Tanks also saw service as engineer vehicles, using the M48A3 "dozer

An M67 flame tank, at left, sends a "rod" of napalm at a practice target during a demonstration at Fort Knox in 1960. Max range was 250 yards, but fuel supply limited length of engagements to 60 seconds total burn time.

The LVTP-7, at right, was a Marine mainstay both in amphibious operations and in the bush on shore.

tank," with its bulldozer blade, to construct river fording sites, or dig in infantry, artillery, and other tanks. Tanks were also used to create landing zones by driving around in circles, or to crush bunkers and tunnel networks by turning on top of them.

Marine armor performed well in their Vietnam experiences in 1965. In August, 3d Platoon, Company A, 3d Tank Battalion made an amphibious landing, with fording kits applied, to support Regimental Landing Team 7 in Operation STARLIGHT. The tanks had trouble with the mud and choke points, and attracted large amounts of enemy small arms fire. However, at the end of the operation, Colonel Oscar F. Peatross, the commanding officer of RLT-7, stated that the presence of the tanks was the difference between extremely heavy casualties and the small number actually taken.

First Tank Battalion began 1966 on Okinawa, conducting intensive training. First Tank Battalion was designated First Fleet Marine Force Tracked Vehicle Battalion when it was augmented with 3d Amphibious Tractor Battalion and 1st Antitank Battalion (Ontos equipped). The battalion's mission was to provide tracked vehicle units to support battalion landing teams deploying around the world. The Corps also began developing the Fifth Marine Division, adding a Fifth Tank Battalion. This fifth battalion would prohibit activating the Marine's reserve Fourth Marine Division. The year did not focus entirely on the Vietnam War, however. The reserve tank battalion was conducting joint exercises with its infantry reserve counterparts in San Diego, and Second Tank Battalion was deployed to Camp Pickett, Va., for routine annual gunnery training.

But as 1965 came to a close, the U.S. strength in Vietnam was over 200,000, and most of three Marine divisions were engaged in holding on to a narrow coastal strip called Quang Nam Province.

In April 1967, the Marine Corps was able to perform its assigned mission as an amphibious landing force. On St. Patrick's Day, two platoons of tanks landed on a hostile shore in Central Vietnam near Da Nang, deployed out of a Navy LST. This amphibious landing was the first on a hostile shore since the Korean War. Often, the Marine Corps had touted its ability to open a new front or conduct operations from the sea onto the North Vietnamese shore through amphibious landings. However, the reluctance of politicians to engage in full combat operations deep in North Vietnamese territory prohibited the Marines from performing their amphibious mission, other than limited operations into South Vietnamese territory.

At times, Marine armor could make use of its mobility and long-range fires, such as in the "Arizona Territory" and in I Corps area of "Leatherneck Square." Here, the open country, free of jungle and heavily wooded areas, permitted both open, off-road movement and long-range observation and fires.

During these early years of the Vietnam War, the Marine Corps tank battalion was under a headquarters unit called "Force Troops." These units were not part of the Marine division, but rather a separate command under the Fleet Marine Force Atlantic or Pacific. Force Troops provided special combat support units not required by the Marine division during normal operations. The M48A3 tank was maintained in the Marine Corps instead of procuring the Army's newer M60 because of the cost of the new tank, compared to the upgrade cost from M48 to M48A3, and the development of the MBT-70, which was to be fielded around 1970. The MBT-70 was to provide a faster, more accurate tank with superior crew protection. The Marine Corps saw little need to rush into the purchase of a new tank, since Vietnam did not permit full use of the range and speed of its M48A3.

The M67 Flame Tank was particularly well-suited to the missions and terrain in Vietnam. Often, the enemy could be forced out of bunker systems by burning, and the flame tanks, or "Zippos," could get close to the enemy under fire and ignite his position. It could burn supply dumps and crops, as needed, to cut enemy operations in an area. The flame tank had a maximum use of 60 seconds of flame. The tank used 10 to 20 second "rods" of flame which could reach out 250 yards, but were most effective at 100 to 150 yards. The tank's limited carrying capacity for the gun system allowed for only 55 to 60 seconds of flame in an engagement. After this fuel was expended, it had only machine guns for its defense. The flame tank provided a psychological edge as well, since the Buddhists in the Viet Cong organization saw death by burning bringing disgrace and curses upon one's soul and his family. However, the flame tank was mostly misused, shunned for its short effectiveness time and high volatility if hit. It was often relegated to base camps, burning vegetation to clear fields of fire or burning garbage.

The antitank battalions of the Marine Corps also saw valuable but limited service in the Vietnam War. The Ma-

rine antitank battalion had 15 M50A1 "Ontos," each with six 106-mm recoilless rifles. The five vehicle platoons were broken down into sections and rarely employed in numbers larger than two. The Ontos was best as a defensive weapon. It was low in profile, and deadly to an armored vehicle or bunker. It could easily traverse bridges and muddy or rice paddy terrain. But it could not sustain a hit from a mine, and its gun could not effectively destroy a well built bunker. Its limitations included the necessity of loading from the outside, inability to fire on the move, and its poor maintenance record. The Ontos was also a victim of its own unpopularity. All personnel in the AT battalion were tankers, and so had little expertise on the vehicle or its employment, and hence had little enthusiasm for the vehicle. Often, the Ontos guns had accidental discharges, endangering those in front of it and to its rear due to the back blast.

The Ontos arrived in Vietnam with the first Marine armored units in March 1965. Third Antitank Battalion was fully in Vietnam by July 1965, and 1st Antitank Battalion arrived in March 1966. The Ontos proved its value in the battle for Hue City, where Company A, 1st AT Battalion was used to knock out enemy bunkers. The political situation prohibited the use of indirect fire so as to limit destruction of historic buildings. But by 1967, the Ontos was nearing the end of its short-lived stay in Vietnam and in the Marine Corps inventory. The accidental firing and nonavailability of track to repair it led the Marine Corps to scrap the vehicle. Third Antitank Battalion was deactivated on 21 December 1967. That same day, 1st Antitank Battalion was cadred to one company, Company A, and attached to 1st Tank Battalion permanently. This would be the forerunner of the later antitank company of the tank battalion.

Prior to 1968, it was hardly imaginable that the Viet Cong or North Vietnamese Army would be equipped with tanks. Tanks had not been seen below the North Vietnamese border, and it was suspected they were being held near Hanoi for security. On 24 January 1968, five enemy tanks were spotted near the border of South Vietnam, a few kilometers from the Lang Vei Special Forces Camp. The same day, the 33rd Royal Laotian Regiment was attacked by NVA regulars equipped with tanks. On 6 February, a company of PT-76s and 400 NVA infantry attacked the Special Forces Camp at Lang Vei. In a matter of two weeks, the war in Vietnam transformed from a foot infantryman's war to a mechanized war.

The Marine tanker was already heavily involved in mobile armored warfare prior to the enemy's introduction of tanks. On 30 January 1968, the 6th NVA Regiment, consisting of eight battalions of infantry, infiltrated in the vicinity of Hue City and the 2d NVA Division began positioning for a full-scale offensive on Da Nang. The Marine Corps began extensive operations in the area surrounding Da Nang, now known as Leatherneck Square. Here, the 3d Marine Division Commanding General, Major General R. Tompkins, formed "Task Force Robbie" under Colonel Clifford B. Robichard. This task force consisted of an infantry battalion, two tank companies, an Ontos platoon, and support units. Task Force Robbie acted as a division reserve.

Throughout the following five months, Task Force Robbie, stationed in the southwest corner of Leatherneck Square, prepared itself to react to enemy actions and concentrations in the area. Artillery was prepositioned, and a series of strike routes were planned to permit the force to quickly mass forces at any point from a multiple of routes. The tankers reconned and rehearsed their movement on the routes to allow the best approaches for armor to these areas. Prior to this, most armor movements were planned by the unexperienced infantry officer, who would choose routes best suited for his plan, not the tanks' capabilities.

Beginning with Task Force Robbie, the infantry began to accept the idea of armor leaders employing their units as they saw best. Tanks were used in Task Force Robbie as mobile units, massed, with armor-oriented formations. By June, the Tet Offensive began to wane, as did the need for a mobile division reserve. Task Force Robbie disbanded to allow its units to spread out and increase visibility of U.S. units in the area.

Other Marine tankers spent the beginning of 1968 busy as well. On 3 February, four tanks in transport from Phu Bai to Dong Ha were in Hue City awaiting ferry craft. Caught unexpectedly in the battle for Hue City, they were the only tanks in the city for 11 days. One tank was destroyed. On 11 February, 3d Platoon, Company A, 1st Tank Battalion arrived at the 1st ARVN compound outside of Hue City to help. They fought around Hue City from 12 to 23 February, expending all of their ammo daily.

Third Platoon, Company B, 3d Tank Battalion was simultaneously engaged in the battle for Khe Sanh. Here, the tanks, augmented with two platoons of Ontos, fought in the epic 77-day siege on the outpost. The post was essentially a strongpoint defense. The tanks and Ontos were hidden in daytime, emerging at night to assume positions on the perimeter to counter infantry attacks and illuminate targets.

The strongpoint defense became a popular method of employing tanks as a reaction force in Leatherneck Square. Tanks were extremely vulnerable to RPG-2 fire. These weapons were easy to hide, and any civilian could conceivably possess one and not be discovered.

The strongpoint technique proved effective during "Task Force Mike" in May of 1968. The Viet Cong and NVA repeatedly ambushed Route 561, and Task Force Mike was committed to protect the road near Cam Lo. The tankers and supporting infantry hid in daytime and came out at

night to overwatch the road. The nighttime effectiveness of tanks improved in mid- to late-1968 as the Marines modernized their tanks with the infrared searchlight. This device permitted night surveillance which was invisible to the naked eye. Missions like these were typical of the period, since the terrain and missions did not favor the use of armor as a maneuver element.

As the Marine tankers entered 1969, their fifth year of the Vietnam War, the U.S. commitment was in full swing. The year began with over 312,000 Marines of four divisions stationed across the globe. Third Tank Battalion, under Colonel George E. Hatward, continued armored combat, security patrols, and road sweeps between the Quang Tri and Dong Ha combat bases, in the Leatherneck Square area. First Tank Battalion supplemented the actions of I Corps around Da Nang, with the Corps' four infantry regiments spread out in belts around the city. Most of the fighting was done by 3d Tank Battalion, its platoons augmenting battalions of infantry in sporadic heavy battles well into the summer.

In September 1969, Marine tank battalions began to plan for their removal from Vietnam. The cause was not their lack of effectiveness, as it was with the Ontos, but rather the political decision to remove troops from Vietnam, as ordered by President Nixon. III MAF selected 26th Marines to pull out in 1970 as part of "Operation KEYSTONE BLUEJAY," and since opetations around Da Nang now required few tracked vehicles, all but one company of 1st Tank Battalion would accompany them.

On 28 January, the cadre of 1st Antitank Battalion (Ontos) departed Da Nang. On 11-19 March, 1st Tank Battalion, minus Company C, departed. Company C remained in support of 2/1 in its attacks on enemy bunker complexes, continuing its actions through July with 2/5 and 3/5 again used as fire support for the infantry. Company C, 1st Tank Battalion returned to Camp Pendleton, Calif., to join its parent unit as part of "Operation KEYSTONE ALPHA" on 29 September 1969.

The year of 1970 found Marine Corps armor trying to reorganize itself and to prepare for future requirements, all the while supporting the deploying battalion landing teams afloat across the globe. Third Tank Battalion was posted at Camp Hanson, Okinawa. First Tank Battalion had returned to Camp Pendleton as part of the 5th Marine Amphibious Brigade. In April 1971, it was reassigned to the 1st Marine Division.

In 1974, the Marine Corps replaced its aging M48A3 and M103 tanks with the newest M60A1 tank. The MBT-70 project failed to produce the tank the Marine Corps had been waiting for, a victim of rising costs and poor management of a cooperative joint project with West Germany. The M60A1, however, proved to be a good tank for the Marine Corps, considerably smaller and lighter than the MBT-70, as well as easier to maintain. It was mobile, with speeds around 25 mph, could fire on the move, and had better sights and a more lethal gun than its predecessors. The M67 flame tank was phased out and not replaced. The Marine Corps hoped it could abandon the mission of convoy escorts, tunnel clearing, and bunker busting, and getting rid of the gear to perform those missions seemed the best way to avoid them.

By 1972, the Marine Corps was moving toward the possibility of employing tanks as a single maneuver force, or at least one team of a mechanized force. The purchase of the LVTP-7 Amphibious Personnel Carrier gave the commander increased mobility, speed, and flexibility. Marine officers now began to consider the employment of Marine task organized units — mechanized infantry and tanks — to quickly overwhelm an enemy position with firepower, speed, and surprise. Marine Corps doctrine now embraced the idea of not only securing the beachhead or naval base, but continuing combat operations up to 100 miles inland — a true doctrine of mechanized war.

Few could argue that the use of armor in Vietnam tethered the tank to infantry tactics. Armor could have been employed as tank pure units and reduced the losses both of unprotected tanks and infantrymen. As the Marine Corps emerged from the Vietnam experience, it took these lessons to heart. The M60A1 still had the infantry phone on its rear for infantry officers to talk to the crew, but the tactics and doctrine now permitted the tank to move fast enough that the infantry officer could not catch the tank to use the phone. And now the tank was on a separate axis, using its mobility and firepower to its fullest.

From the beginning of 1965, as Marines entered an infantry war of attrition and firebases, to 1975, when Marine Armor was able to attack as a tank pure force at full speed, firing on the move, the Marine Corps had to continually alter both its mindset and its manuals. As Marine armor entered the mid-seventies, with third world nations and Soviet surrogates all well-armed with armored vehicles, it stood ready to execute its assigned mission — to deploy to "any clime and place" and win.

Captain Steven L. Parrish was commissioned in 1983 from the University of New Mexico. He served as a tank commander and adjutant at 1st Tank Battalion, Camp Pendleton, Calif., from 1984 to 1986; as a company commander in 2d Tank Battalion from 1990 to 1991, during Operations DESERT SHIELD/STORM; and as the Marine Officer Selection Officer in Indiana. He is currently assigned as the Inspector/Instructor for the Marine Reserve Tank Company, Company A, 8th Tank Battalion, Ft. Knox, Ky.

First Into the Breach: Sabre Squadron at the NTC

by Lieutenant Colonel Robert W. Mixon Jr. and Major David E. Robinson

For many units, deployment to the National Training Center is a deliberate process, with schedules usually published 12 or more months in advance. Leaders at all levels can map their training strategies, refine their organization's procedures, and prepare their soldiers, equipment, and families for this major event. But what happens when units receive four-month's notice — with three months to train — for their NTC rotation? And what happens when this notice arrives within 45 days of a unit's return from Iraq and Saudi Arabia? Such were the circumstances that the 2nd (Sabre) Squadron, 3rd Armored Cavalry Regiment, confronted in May 1991. In this article we will describe how the Sabre Squadron met this challenge successfully, completing a safe rotation in October 1991.

Assessing Our Readiness

In mid-June 1991, most of the squadron's soldiers had just returned from their post-DESERT STORM leaves. Tanks, Bradleys, trucks, and howitzers were finally back in the motor pools after their journey across the ocean. Three of the seven wheel base unit commanders, and the squadron commander, had just assumed command. The squadron executive officer, and every primary and special staff officer, were also new to their duties. Fortunately, most of the lieutenants and noncommissioned officers remained in positions they had held for the past several months, a fact which would be of tremendous benefit at the NTC.

Initially, though, assessing the squadron's status was difficult. The leaders were solid, but many were untried in their new positions. The tanks and Bradleys were virtually new, but the rest of the squadron's vehicles and equipment were well-worn survivors of many years in various deserts. And although over 80 percent of the squadron's soldiers were DESERT STORM veterans, the range of tasks and missions to be performed at the NTC were more varied than those the squadron performed in Southwest Asia. Everyone knew it would be tough — we were the first DESERT STORM unit to return to the NTC, and the OPFOR would in many ways be more formidable than the Iraqis.

From the outset, we decided to focus our training effort at the platoon level. To assess and build these platoons, we established three imperatives necessary for battlefield success: rapid and secure movement, good drills on contact, and sustaining the force. We held to these imperatives throughout our summer of training, using platoon and troop ARTEPs, a qualification gunnery, and a regimental FTX to develop our junior leaders. After our first field exercise in early July, we believed the platoons were sound in their movement techniques and actions on contact, and we determined our logistics procedures were solid. We next had to refine squadron procedures and sharpen our "rusty skills" to be ready for the OPFOR by 1 October. By summer's end, the squadron's junior leadership understood the full range of troop leading procedures, and they could execute combat techniques and procedures with confidence and vigor. The staff was improving, particularly in the speed by which we could issue orders to the troops. Our standard: 80 percent of available time to the troops, 20 percent for the squadron. Matrix orders helped us meet that goal.

Sustain the Force

Our first concern was sustaining the squadron's families. This group had just endured six-month's separation from their husbands and fathers, and we were now going to ask for another four months apart. The Third Cavalry's *Family Handbook* and the care plans used for the Gulf War were tested, refined, proven solutions which would support our brief stay at the NTC. It was important, though, not to take this foundation for granted — nothing makes the Chain of Concern work but dedicated people and family spirit. We had several deployment briefs for families, published newsletters, and scrubbed our rear detachment plans carefully.

In the field, sustainment required constant emphasis, too. The squadron developed standard resupply formations and procedures in Saudi Arabia that take advantage of the open terrain

found in the desert. By lining-up similar vehicles into columns, and specifying which units go where by using code words, we simplified the resupply process greatly. Our "Sabre Laager" (see Figure 1) allows the squadron commander to position priority units to the front, provides all-round security, and speeds rearm/refuel efforts significantly. We risked greater vulnerability to air and artillery attack with the laager. However, the LOGPAC speed and overall simplicity we gained were tremendous advantages.

We vigorously pursued the "fix-forward" doctrine throughout our field operations, but we added a "twist" for the NTC: early identification of potential maintenance problems. Drawing 70 percent of our vehicles, the entire chain of command took an active role in assessing the state of the NTC vehicle fleet. Parts requisitions and maintenance requests were carefully monitored from the first day. We kept unit maintenance teams well forward, and each platoon carried at least one tow bar to enable rapid recovery to maintenance collection points. We found the quality of the NTC fleet varied widely by vehicle; however, we maintained a 92 percent operational readiness rate throughout the rotation. This proved our procedures were sound, and our crews were doing preventive maintenance.

We used fixed times each day for assemblage, movement, delivery, and recovery of LOGPACs. This approach reduced the amount of time devoted to planning and coordinating the squadron's logistics by fostering cross-talk between the assembled first sergeants, the admin-logistics staff, and the command sergeant major on a regular basis.

We streamlined our command and control procedures, too. The squadron TOC initially received, analyzed, and

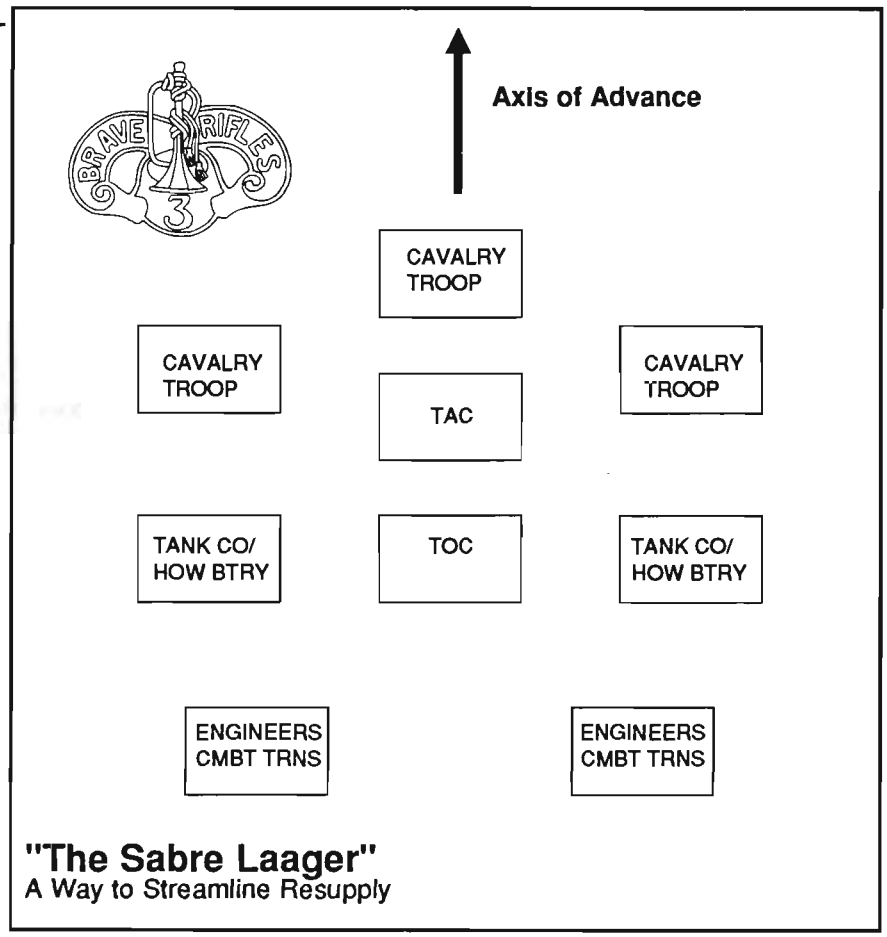


Figure 1

produced OPORDs under the XO's supervision, while the squadron commander and S3 remained forward with the unit commanders. Usually, the squadron commander (SCO) would return to the TOC to give guidance and intent, then he would return to the battle area. All of the commanders, XOs, primary and special staff officers, and others as needed attended the orders group. Afterward, unit commanders and their XOs compared notes, and the XOs left to get the units ready. The commanders and S3 then reconnoitered the area of operations, and all reconvened at the TOC or TAC for a rehearsal. We routinely positioned the S3 and squadron commander forward (with the commander on one side of the battlefield, and the S3 on the other) while the XO ran the TOC. Overall, the process saved time, but the cost was that the unit commanders missed two to three hours of unit preparation. The unit XOs carried that load extremely well, though, and the process worked. Just before LD time, commanders would gather quickly if possible to receive an intel update from the SCO. Otherwise, the S2 would broadcast an abbreviated intel update over the squadron command net.

Rapid, Secure Movement

We realized much of the OPFOR's success is attributable to its rigorous

application of the fundamentals of reconnaissance and security. It routinely employs long-range observation teams, and dispatches mounted elements well-forward of its formations.

CATS and "Hot Troops"

The Third Cavalry "reverse engineered" these concepts, and created similar structures to reduce battlefield uncertainty for the commanders. These we call Combined Arms Teams (CATs) and "Hot Troops."

Each cavalry troop created a four-man CAT composed of an NCO, a FIST member, and two scouts (at least two of these four men were combat lifesavers). The squadron's three teams were assembled at the TOC and placed under the control of the operations sergeant major. We had one HMMWV set aside for mounted insertion, but we relied heavily on the UH-60s of 4th (Longknife) Squadron for most of the teams' insertions (occasionally, we incrementally inserted a team with OH-58s so as not to arouse the OPFORs suspicions). When not inserted, the CATs augmented TOC security, and moved in the TOC's vehicles during displacement. The CATs gave the squadron something it never had before — organic, responsive means to collect fresh information about the enemy hours in advance of his arrival at the FLOT. Even as the close fight was progressing, the CATs gave valuable information about the location, speed, and direction of movement of the follow-on echelons. (Several times during the rotation we diverted CAS to interdict these relatively deep formations.) Probably the most valuable aspect of the CATs' information was the timeliness of their reports. Information from the CATs, passed on the squadron operations and intelligence net, permeated quickly throughout the squadron (sometimes their information was so significant we had them operate on the squadron command net). The CATs were normally employed for 24-48 hours at one spot. The S2 monitored their status, and they were either resupplied or withdrawn depending on circumstances. We employed no more than two teams at once, giving the remaining team time to rest.

The Hot Troop concept was worked out during our regimental FTX in the summer, and achieved full refinement at the NTC. Essentially, this element is an advance guard for the squadron and, occasionally, the regiment. Its mission was to reconnoiter and secure the main body's route of march, then secure the LD while the main body deploys for the next mission. Once the main body passed through the Hot Troop, it reverted back to the status of a maneuver element within the main body.

Depending on mission, we task organized the Hot Troop with other combat and support elements. Most often, at least a platoon of combat engineers and additional recovery and supply elements from the squadron trains accompanied the Hot Troop. On occasion, we used the Hot Troop as a nucleus for a mini-taskforce, with the S3 placed in charge of the troop, engineer assets, and the squadron's howitzer battery. The squadron TAC, FSO, and ALO moved with the S3 to provide command and control, and the squadron's RETRANS moved forward also to maintain communications with the commander and TOC.

The combined effect of the CATs and the Hot Troop was to extend the commander's view of the battlefield. We could fight the reconnaissance/counterreconnaissance battle sooner and with greater precision, depriving the OPFOR of information and exposing his activities to us. We could engage the OPFOR with artillery and CAS earlier, and adjust friendly positions before his arrival. These techniques leveraged the contributions of traditional ground and air cavalry, and gave us enhanced abilities to detect, engage, and destroy the enemy.

Good Drills on Contact

Combined with excellent MILES gunnery discipline (encompassing receipt, installation, boresight, and maintenance), a few simple, well-understood drills can make the difference between success and failure at all echelons of command. We knew that the sections and platoons would have many opportunities to hone their abilities before deployment, but the units and the squadron would have only a few. With this in mind, we developed several simple formations with accompanying drills for the squadron. A salient feature of these drills was the lack of fixed locations for each unit in each formation. Instead, positions in formations were assigned numbers, and units were told which position to occupy based on METT-T. The drills mirrored our combat-proven Sabre Laager, and leaders were comfortable with the technique and could grasp the concept easily. Even obstacle breaching received this treatment, and all units in the squadron were able to perform any of the roles required in this drill.

We used a concept of "fixing and flexing" forces at the squadron level to simplify our battlefield decision-making and to enable us to respond rapidly to changing circumstances. (This is another adaptation of OPFOR techniques that we found to be very practical.) Whenever a lead unit encountered an enemy force that was beyond its ability to overwhelm, the unit would fix the enemy by establish-

"The other aspect of preparing for the NTC that paid handsome dividends was the continued emphasis on rehearsals and AARs. We found that every aspect of our preparation, garrison and field, showed steady improvement when preceded by rehearsals and followed by solid AARs."

ing a hasty defense. Once the unit was set, we would flank the OPFOR with follow-on units, flexing them to attack the sides of the fixed enemy or driving on to deeper objectives. We would anticipate when and where fixing and flexing would occur by templating the OPFOR's locations and developing contingencies in our graphics. These contingencies took the form of proposed attack by fire positions and axes of attack. We retained our momentum during offensive operations with this technique, and we found it useful for directing counterattacks in the defense.

Something else that became a drill for us was our use of "Cheap Tricks." Every tank and Bradley in the squadron carried pickets, concertina wire, and a mix of antitank and antipersonnel mines for two purposes: emergency resupply of attached engineers, and emplacement of small, local obstacles in front of vehicle positions. We used the latter most often, and with very positive results.

The Cheap Tricks augmented more extensive barriers by giving depth along main avenues of approach. When they were employed independently, they confused the OPFOR as to the locations of the more extensive works, and they increased the element of surprise by "showing up" unexpectedly on the battlefield.

In one case where we ran out of wire while building an engagement area, we simply placed long pickets in the ground at intervals. The OPFOR, encountering the picket line, conducted a full breaching drill under fire and suffered heavily.

The Cheap Tricks also helped us prepare the hasty defense after a successful advance, because the materials were immediately at hand for the tankers and scouts of even the most forward elements of the squadron.

Conclusions

We decided from the outset that reliance on the basics, and avoidance of the "yet another good idea at the LD" syndrome, were key to success. In the absence of a long-range training window, we quickly assessed the competence of our platoons and our logistical system. Finding both vital components in relatively good shape, we built a rapid staff planning process which would put out orders in 20 percent of the time available, leaving 80 percent to the units, platoons, and sections. Our fundamental premise was that "even a bad plan will work if you execute the hell out of it." No one excused poor planning; rather, we sacrificed the tendency to search for the perfect solution to get the order out quickly.

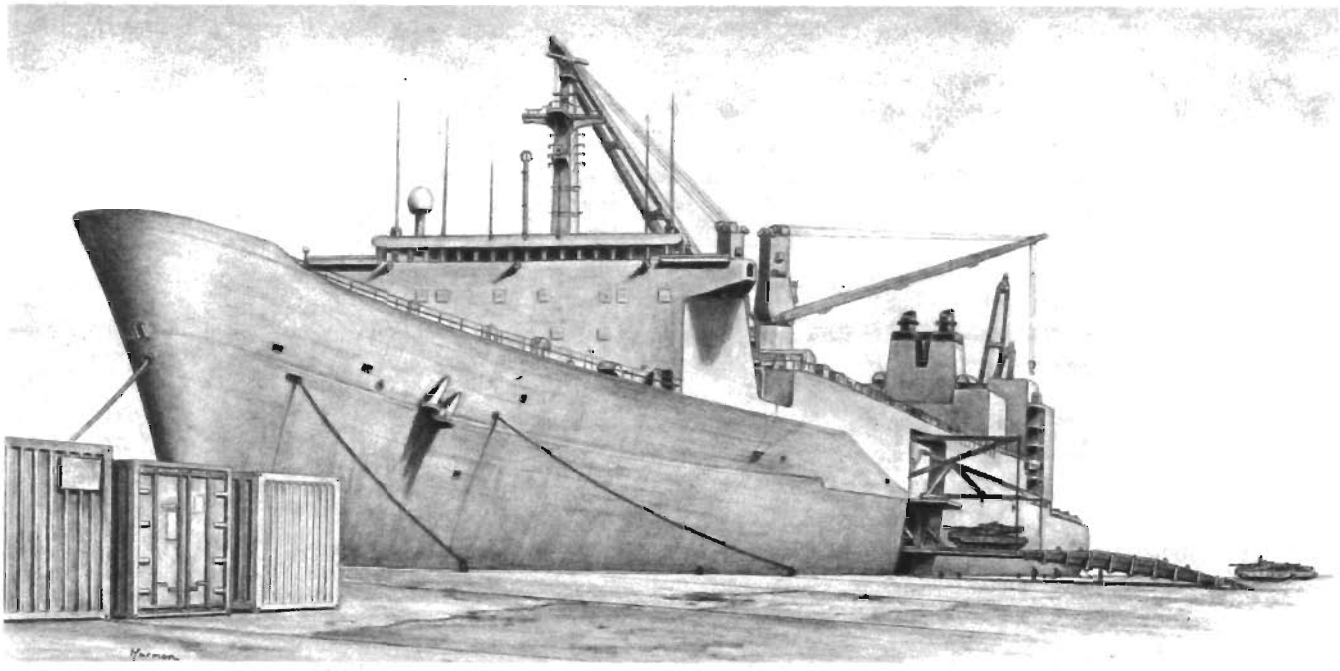
The other aspect of preparing for the NTC that paid handsome dividends was the continued emphasis on rehearsals and AARs. We found that every aspect of our preparation, garrison and field, showed steady improvement when preceded by rehearsals and followed by solid AARs. We could not simply dust off the previous NTC plans because most of our training records did not survive the DESERT SHIELD/STORM deployment. Using the experience in our ranks, and several productive TDY leader trips to the NTC, we developed garrison and field training plans that were simple and effective. Refining them through rehearsals and AARs, we now have a very sound testing regimen that we can build on for future deployment.

NTC Rotation 92-1 succeeded because we learned, and we kept the soldiers safe. Those two elements validate General Rommel's proven statement, "The best form of welfare for troops is first class training."

Lieutenant Colonel Robert W. Mixon Jr.was commissioned in Armor from the USMA in 1974. After attending Ranger School, the Armor Officer Basic Course, and Motor Officer Course, he joinied the 3/11th ACR in 1975, and commanded L Troop from November 1977 to May 1979. He attended the USMC Amphibious Warfare School and obtained a Masters in history at Rice University prior to teaching at West Point. He then attended CGSC and the School of Advanced Military Studies at Ft. Leavenworth. At the 2d ID in Korea, he served as G-3 (Training) and deputy G-3, and in Germany, as S3 and XO of 3d Squadron, 2d ACR. He also served as aide-de-camp to General Saint in USAREUR. He currently commands 2d Squadron, 3d ACR at Ft. Bliss.

Major David E. Robinson was commissioned in Armor in 1975 from the Florida Institute of Technology. After attending Armor Officer Basic and Motor Officer Courses, he was assigned to 1st Squadron, 2d ACR in Germany. After AOAC in 1980, he commanded F Troop, 2/3 ACR, Ft. Bliss. He attended CAS^3, and later served as an officer training evaluator-instructor at Cavalry Branch, Command and Staff Department, USAARMS. He was deputy chief of the BFV NET Team, at Ft. Knox. He retumed to Ft. Bliss in 1988 to serve as chief, Training Analysis, USASMA, then as S3, 56th ADA Training Brigade. Rejoining the 3d ACR in August 1990, he was the regiment's LNO at HQ, XVIII Airborne Corps. He became S3, 2d Squadron, in June 1991. He holds a Masters Degree in Human Resources Development from Webster University, and will attend the 1993 class of the USMC Command and Staff College.

STRATEGIC MOBILITY: HOW DO



Sealift Is to Armor as Airlift Is to Airborne

by John A. Adams

The threat to NATO has all but evaporated. During the last two years, the American Army brilliantly executed two contingency operations; a predominantly "light fighter" engagement in Panama and a heavy tour de force in Southwest Asia. These events have reshaped many beliefs about force structure. Rapid deployment to unforeseen distant troublespots now dominates our thinking. We must have strategic mobility.

Unfortunately, many treat "strategic mobility" and "airlift" as synonymous. To move the heavy force more easily by air, some suggest seeking a lighter vehicle than the M1 to re-equip armored forces that are to accompany contingency deployments. If the goal is to make vehicles better fit an airlifter, we may be compromising tactical capability for a feature that is unlikely to be used.

To better understand potential deployments, let's distinguish between stability and combat operations. We define stability operations as shows of force, rescue of civilians in immediate peril, and the quelling of disturbances perpetrated by loosely knit rabble. Combat operations are designed to impose American (or allied) will on large, formally-organized military units operating under the direction of a sovereign state.

Sometimes, stability operations require a ground power response within hours or a few days. This mission has

Continued on Page 28

The Gulf War again proved the
middleweight regional threats, bu
revealed a weakness: It takes time

One answer is the AGS, a mo
killing system. But why not just de
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Major E.C. Parrish argues that
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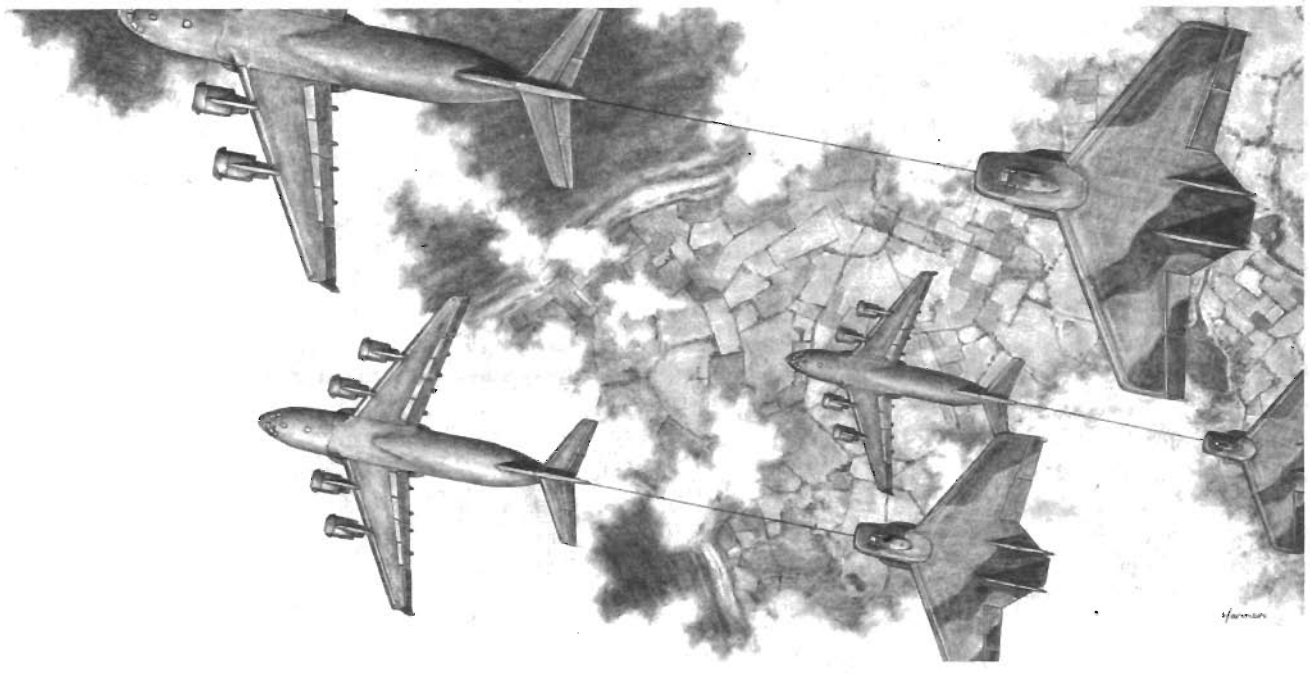
ES ARMOR GET TO THE FIGHT?



It's Time to Consider Glider Delivery of the M1 Abrams

by Major E. C. Parrish III

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Gliders.

Just mentioning the word conjures images of somersaulting Waco CG-4As, smashed equipment and dead infantrymen, night-blind "flying sergeants," and white-knuckled soldiers sledding through dark landing zones.

Though accidents occasionally happened, most glider operations were safe and at least as effective as paratrooper assaults.[1] But legends of helpless, out-of-control glider rides are an institutional myth in the Army. Such myths are hard to overcome for two reasons: first, leaders believe them; second, myths provoke emotions, and emotions stop thought. Think critically; do not react emotionally. Then, glider delivery of main battle tanks just might make sense.

Now, to dispel a common misconception, gliders are not sailplanes, just as 18-wheel trucks are not sports cars. Sailplanes are competition instruments for acrobatic or racing flying; gliders, on the other hand, are airborne cargo barges.

Of course, today helicopters do most things gliders used to do and at far less cost. But no helicopter ever will be able to fly from, say, Fort Bragg to Saudi Arabia with the 82d Airborne Division, and discharge a pair of fully functional M1 Abrams tanks on the drop zone. A glider could.

The 82d is a great division of tough soldiers and tougher leaders; and paratroopers think of tanks as "big game."

Continued on Page 34

traditionally fallen to embarked Marine Expeditionary Units (MEU), the 82d Airborne and, more recently, Special Operations Forces (SOF). A battalion of Marines or paratroopers on the ground demonstrates resolve that can cause an aggressor to think twice about initiating hostilities. If there is insurrection in the streets, highly constrained employment of small arms by disciplined troops is likely to be the most appropriate response. Terrorists and unconventional threats are the realm of SOF.

Army light units have limited firepower and tactical mobility. While their armament is likely more than adequate for most stability operations, they may require added tactical mobility. HMMWV-mounted MPs might be the most appropriate initial augmentation. We must think in terms of organizational skills as well as hardware. MPs are trained in the constrained use of force in an environment filled with civilians. HMMWVs provide tremendous mobility without the damage associated with tracked vehicles, their machine guns are impressive firepower against paramilitary resistance, and the hard top variant provides some protection against potshots. An MP company or battalion does not impose an overwhelming airlift problem.

Required Reinforcement Speed — Recent Experience

Over the last 30 years, our thinking has been colored by images of thermonuclear Armageddon on a 30-minute fuse. While stability operations can unfold in hours, recent history demonstrates that conventional combat operations are not likely to be initiated until weeks or months have passed.

Only airlift can respond in 48 hours. However, the fastest way to move an armored unit of significant operational size is by sea. Fast sealift, SL7 ships, can traverse the Gulf of Mexico in less than two days, the Atlantic in six to nine, and reach the farthest points in Southwest Asia in less than 20. While too slow to react to a hostage rescue situation, compare these transit times with the political and diplomatic time lines of the two most recent combat operations.

URGENT FURY in Panama, probably the lowest end of what might be termed combat operations, developed over many months. Relations with Panama deteriorated over a period of years. We might mark the beginning of U.S. military involvement when Panamanian Defense Forces blocked nine school buses carrying American children — 3 March 1989. American MPs extricated them, and a company-sized reaction force was alerted. (MP reinforcements from the 16th MP Brigade (Airborne) had entered Panama in early '88). Additional problems erupted after elections on 7 May. On 11 May, the President decided to send an additional 1,900 combat troops. A mechanized battalion from the 5th Infantry Division (Mech) was included. It arrived aboard an SL7 fast sealift ship, and M113s debarked directly onto the concrete sides of the canal's locks. After a long, drawn-out series of confrontations and diplomatic efforts, combat operations under JUST CAUSE began December 20.[1]

DESERT STORM also had a genesis measured in months.[2]

24 July — CIA identifies Iraqi build-up on the Kuwaiti border.

Late July — 70 Air Force tankers are ordered into the area.

1 August — Six warships, led by the carrier *Independence*, enter the area and an exercise with the UAE begins.

2 August — The Iraqis invade. General Schwarzkopf and Secretary Cheney brief the President on the developing situation.

4 August — The Pentagon briefs the President on the military details of War Plan 1002. Secretary Cheney departs for hurried consultations in the Middle East.

6 August, evening — Orders issued to execute Plan 1002-90.

7 August — Elements of the 82d Airborne and the 1st Tactical Fighter Wing begin deployment. By 13 August, an airborne brigade and five fighter squadrons are in Saudi Arabia. Ships carrying prepositioned equipment leave Diego Garcia 7 August and arrive 17 August. Marines marrying up with equipment unloaded from the ships become the first medium/heavy U.S. ground power deployed in the theater.

10 August — First SL7 ship arrives in Savannah to begin loading 24th Infantry Division (M).

17 August — Apache-equipped 1st Battalion, 101st Aviation arrives in Saudi Arabia aboard seven C5Bs and 17 C141s.

27 August — The first fast sealift ship from the U.S. arrives in Saudi Arabia.

1 October — The U.S. Congress passes a joint resolution to support the President's efforts to "deter Iraqi aggression."

Early November — The decision to deploy VII Corps is made.

20 November — 45 House members file suit to force the President to seek Congressional approval before attacking Iraq.

4 December — First elements of VII Corps leave Europe.

12 January — After two days of debate, Congress authorizes use of force.

17 January — The first air missions of DESERT THUNDER roll down the runway during the early morning hours.

Neither of these examples required heavy ground combat power within days of a realized threat. Judging from history, the President is most likely to exhaust all diplomatic sources before the U.S. resorts to the use of the type of force heavy units generate. In both cases cited, heavy forces were moved by sea before U.S. forces began hostilities.

The largest airlift in history supported DESERT SHIELD. In the first 30 days, 39,991 tons arrived by air.[3]

Competition for tonnage was intense. The Air Force needs tonnage to move the first fighters into theater. Fortunately, Air Force related stores equating to 1,800 C141 loads had been prepositioned in Saudi prior to hostilities.[4] Without this nest egg, airlift for ground forces would have been even more constrained.

Among lift allocated to ground forces, initial light Army units usually take first priority. Air defense assets, communication and control units, and the first logisticians to unload the initial serials all need priority.

Where is heavy armor in airlift priority? Some have advocated that we downsize main battle tanks into the 40-ton range to improve their air transportability.

A battalion of notational 40-ton tanks weighs in at 3,000 tons (including an austere complement of required support vehicles). Is a tank battalion going to get 10 percent (20 percent if M+15 is the criteria) of all available airlift? Remember, fast sealift arrives at M+20. By M+30, 123,590 tons had arrived by ship in Saudi Arabia. The heavies came by sea.

Alternative Rapid Reinforcement Force Packages

All well and good for DESERT SHIELD. But what if a future deployment has additional mobile or antiarmor capability as an absolute requirement before M+20?

First, let's not forget the Marine Corps. Three brigade-sized unit sets of equipment are stored aboard ships in Maritime Positioning Squadrons (MPS). Depending upon their initial placement, MPS might be available in the 10-20 day time frame. In DESERT SHIELD, the first prepositioned ships arrived at M+10. Their equipment includes main battle tanks, from company to battalion strength, 155-mm artillery, and armored amphibious assault vehicles. However, their personnel must be airlifted. This is yet another competing demand for airlift — and one that generates more combat power per sortie than airlifting armored units into the theater.

What if the initial airlifted force needs more antitank capability before any sea-based reinforcement can arrive? Before we start backing tanks into airlifters, four lighter alternatives exist in our current inventory. Additional HMMWV-mounted TOWs are the lightest way to add firepower. A single motorized brigade is scheduled to be retained. Subelements of this TOW-heavy unit are accustomed to fast-paced operations against a heavier opponent. No one will expect light/middleweights to advance against large main battle tank formations. But they can successfully delay. Remember, the heavies are already at sea and only a few days behind.

Want more punch and protection? An ITV antitank company from a mechanized infantry battalion is the next step up. A more capable, albeit heavier, vehicle, the Bradley, is option 3. Again recalling organizational skills, Bradley-equipped cavalry troops might be preferable to mechanized infantry. Guard, delay, and economy of force are traditional cavalry missions.

As a side note, a few Bradleys might add significant capability to a force engaged in stability operations. To the uninitiated, they look like tanks and are very intimidating. Their chain guns are likely to be more useful than 120-mm sabot and, while not Chobham clad, they have substantial protection.

Finally, let's not forget attack aviation. Pound for pound, Apaches generate more defensive antitank power than M1s. As in DESERT SHIELD, helicopters have routinely been deployed by air. Light units are accustomed to employing Army aviation. It's hard to imagine any significant American deployment not including helicopters.

And if all else fails, the Air Force can move four — or 14 — of anything in our inventory. Granted, one gets 50 percent more 40-ton vehicles than 60-ton vehicles per sortie (on average). But we are far out on the probability of occurrence curve when we talk about airlifting main battle tanks.

Currently, the M551 that is organic to the 82d's sole airborne armor battalion is the first armored vehicle to be called on in a deployment. M551s were airlanded in both Saudi and Panama. A handful were paradropped in URGENT FURY. A replacement for this 1960's system has been under discussion for some time.

A 20-ton class, low-recoil 105-mm Armored Gun System (AGS) has been selected as a replacement. While this system has its adherents, how critical is it? Properly employed fast sealift reduces the window covered by an air-transported system to about 10 days (D+10 when airlifted systems arrive in any but token numbers, and D+20 when sealift arrives).

Low-recoil gun systems will not defeat advanced armor arrays. LOSAT (Line of Sight Antitank Vehicle) is to be armed with hypervelocity missiles that show much promise against the projected threat.[5] To be fielded in 1997, this system will be mounted on a modified Bradley chassis and is scheduled to replace ITVs in large numbers.

Does it make sense to commit a portion of our shrinking resources to pursue fielding of a less promising technology (AGS) to cover a small window of vulnerability? The Bradley itself might make a good interim system if the M551s can't hold together until LOSAT arrives. Judging by the success of Marine LAV units, an antitank oriented organization that is competent to perform traditional cavalry guard and covering force operations might be the most appropriate augmentation for light fighters holding off armored hordes.

Three light divisions, 82d Airborne, 7th Infantry Division (Light), and 101st Air Assault are scheduled to remain in CONUS in the FY95 force structure.[6] At best, only two light armor battalions are likely to be ac-

quired. Transferring AGS development funds to a fast sealift acquisition is likely to be in the Armor community's interest.

Concentrate on Moving Heavies by Fast Sealift

Current force planning envisions two full-strength, CONUS-based heavy divisions by FY95. They will be backed up by three heavy divisions maintained at a lower readiness status with each including a roundout reserve component brigade. The number of National Guard divisions will be cut, but a greater percentage of heavy units will be retained.

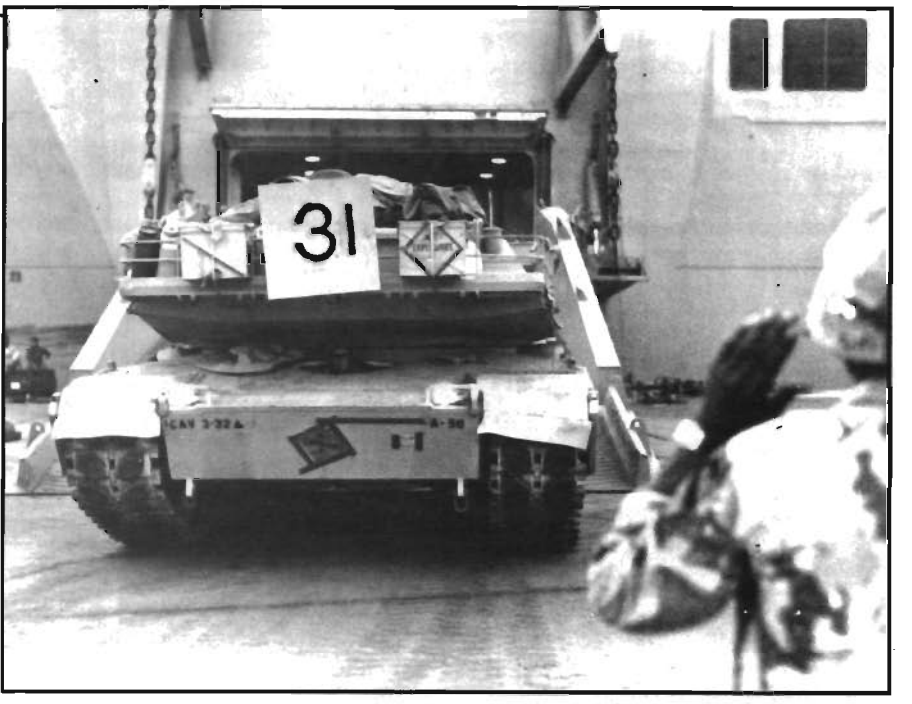
Perhaps the biggest shortfall during DESERT SHIELD was fast sealift.[7] Given our projected Army force structure, the capability to move two heavy divisions in a single lift appears to be the appropriate target. The current fleet of eight ships can lift a single division, so another eight large fast sealift ships would be required. That number has been suggested within the Pentagon as well.

Assuming a reasonably distant point, the first two divisions would arrive about M+20. The second pair would need to be ready for shipment about M+40 and arrive M+60. A fifth division, if required, might also close on conventional shipping about the same time if it was available at dockside about M+20. Full National Guard divisions might follow in the M+60 to M+90 time frame, which is about as early as they might be ready for deployment.

Without the added shipping, we might be looking at a single heavy at M+20 and three (or four if one arrives via conventional shipping) at M+100. In the case of DESERT STORM, this was considered insufficient to begin offensive operations.

Notice our analysis is measured in divisions. Airlifting armor is measured in battalions.

We all know that any given capability can be purchased only by foregoing another. A slightly slower ship type than the 30-knot SL7 is under consideration. Eight might average $150 million a copy — about the cost of a C-17. That's right. In capital cost, the tradeoff is roughly one ship for one aircraft.[8]



Adding eight more fast sealift ships, like this one unloading the 1st Cavalry's M1s in Saudi Arabia, would allow planners to get heavy forces to the scene twice as quickly at an acquisition cost of $1.2 billion, according to the author. But he stresses that in addition to more ships, the Army needs more practice loading them quickly.

Adding eight more fast sealifters, perhaps a $1.2 billion acquisition, doubles our ability to generate heavy combat power per unit/time at a distant point. While it isn't quite as simple as that, no other alternative is likely to multiply ground power as quickly. Although $1.2 billion is a lot of money, gaining the capability to double the rate of our heavy force buildup is worth sacrificing a few airlifters and some lower priority Army developmental programs.

The real tradeoff we have been wrestling with is less capable air-delivered units vs. more capable sea-delivered ones. The difference in transit time for the lead units is about ten days. Please inspect the chronology of DESERT SHIELD. Queued by intelligence warning, Air Force tankers were deployed before the Kuwaiti invasion. A naval task force altered deployment at least a day before the invasion. What were the heavy ground gainers doing?

Realistically, it takes at least four days to marshall for large scale sealift. The sealifters themselves are on a four-day string. XVIII Corps, literally working hand in glove with the Air Force, maintains a rapid deployment capability that can be triggered with a few code words. Why shouldn't the heavy force have a similar, ready-to-be-called-on capability?

Four days' lead time is 40 percent of the postulated air-landed force's window of vulnerability. Simple procedural change and exercised marshalling and sealift capability can reduce our exposure without spending for development and procurement of new equipment.

We experienced two outstanding feats of arms because "we trained the way we intend to fight." Comparative "beancounts" of hardware have repeatedly misled military analysts. Well trained, thoroughly exercised troops are the decisive edge. XVIII Airborne Corps frequently practices aircraft load-out. How about the heavy forces? Movement of ships to

loading areas and pre-debarkation preparation should be an easily executable option.

In-theater presence is far superior to lifting forces in a crisis. Currently, the most explosive arena remains the Middle East. The incredible destruction of the war in Kuwait underscores the value of deterred war as an incalculable multiple of the cost of forces in place to deter it. The best two-battalion force is on the ground preventing aggression, rather than arriving by whatever lift during the first "x" days **after** an attack.

Some thought has been given to stocking a heavy division's equipment in the Gulf area. This can be easily "funded" from the six POMCUS division sets in Europe. While many political and diplomatic questions must be considered, there are few places where a tank park would add more to world stability.

What does all of this mean to the Armor Force?

First, constraining main battle tank design to meet airlift requirements is not a very good idea. Whether 60 tons or 40, few MBTs are likely to be airlifted. Current thinking points to a 60-70-ton next generation main battle tank.[9]

We faced the weight vs. capability tradeoff in the genesis of the M1. A lot of people wanted to forgo heavy armor to maintain a 52-ton weight. General Abrams, the tank's namesake, decided in favor of tactical capability then. DESERT STORM validated the wisdom of this decision.[10]

Second, the Armored Gun System is not as high a priority as sealift enhancement. Only one or two such battalions, 82d Airborne and perhaps 7th ID (Light), are likely to be added to the force structure. Many alternatives to an AGS capability exist, and a superior system, LOSAT, is scheduled to enter the force in a few years.

Even in stability operations in close terrain, such as Vietnam, the robustness of main battle tanks has proved their worth. Recall that the M551 was withdrawn from Vietnam while the ratio of M48s to the in-country force structure steadily increased.[11]

Third, light units need to exercise more with combat MPs and cavalry. These units might become routine augmentations, both in the initial stages of an air-landed combat operation and in some stability operations.

Fourth, marshalling heavy units and loading the ships is a complicated process. The 24th ID (Mech) and the Navy both ground their teeth as they tried to overcome serious coordination problems in their joint DESERT SHIELD move. XVIII Airborne Corps service elements are very skilled at loading out aircraft. Perhaps a similarly well-oiled and exercised ship-loading capability is the cheapest way to reduce the window of vulnerability for air-landed forces facing hostile armor.

Fast response time to a materializing or realized threat is critical. However, fast response is not running to the fire without the means to put it out. General Forrest's often-quoted advice emphasized both "firstness" and "mostness."

At first glance, air-landed light units appear to be the most likely used ground force. Closer inspection reveals that active combat operations are likely to unfold on timeliness that can be met with rapidly marshalled heavy units delivered by fast sealift. No other force generates ground power at the rate of a heavy combined arms force. Concentration on generating this capability, even at the expense of embodying the latest technology in what must be a relatively small air-landed light armor force, appears the best way to meet our commitments in distant lands.

Notes

[1]Chronology follows A.M. Schilling, "Force Protection: Military Police Experience in Panama," *Military Review*, March 1991, USACGSC.

[2]Chronology compiled from "Tracking the Storm," *Military Review*, September 1991, USACGSC; J. Blackwell, *Thunder in the Desert*, Chap. 4, Bantam, 1991; "Reaching Globally, Reaching Powerfully: USAF in the Gulf War" Dept. of Air Force, September 1991; and R. Mackenzie, "Apache Attack," *Air Force Magazine*, October 1991, Air Force Association.

[3]Tonnage figures from September 1991 *Military Review*, p. 68, and "Reaching Globally," pp. 9-10.

[4]"Reaching Globally," p. 8.

[5]E.C. Ludvigsen, "Armor's Future: From One, Many," *Army Magazine*, May 1991, p. 41, Association of the U.S. Army.

[6]"Fact Sheet The Army Budget for Fiscal Years '92 and '93," Institute of Land Warfare, Association of the U.S. Army.

[7]"TRANSCON CinC Supports More Sealift to Meet Army Needs," *Armed Forces Journal*, June 1991.

[8]Budget analysts will correctly point out that comparing equipment acquisition costs is not the equivalent to a complete analysis of life cycle costs. But the rough trade of eight new production airlifters for eight fast ships capable of lifting an armored division appears very attractive. (If we relax the requirement for outsize equipment, many used, commercial widebodies, capable of generating ton miles at lower operating cost, can be acquired for a quarter of the cost of new equipment, and have service lives of 10-20 years at military utilization rates.)

[9]Ludvigsen, p. 36.

[10]Orr Kelly, *King of the Killing Zone*, Chap. 4, Berkley Books, 1990.

[11]Derived from Shelby Stanton's *Vietnam Order of Battle*, p. 333, U.S. News Books, 1981.

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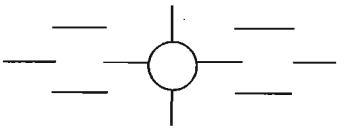
Gulf War Showed the Need For More Powerful Optics

by Captain Francis E. Wynne



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The purpose of this article is to explain how the Army determined the criteria for the optical sights on armored fighting vehicles prior to Operations DESERT SHIELD/DESERT STORM, and why it should be looking at the need for more powerful optics after the war in the Gulf.

As the Gulf War ended, the Army reviewed the actions that took place to document the major lessons learned. The performance of the Armor Force would be greatly scrutinized, mainly because the majority of the weapon systems used in the Gulf War had never been combat tested. While the majority of the weapons systems far outperformed any prior expectations, the need for more powerful optics on armored fighting vehicles was repeatedly highlighted in after-action reviews.

Why have all the major superpowers in the world determined that a 3x10 or a 3x12 powered magnification sight was adequate for their main battle tanks? Up until the late 1970s, every country which produced an MBT, except for Israel, did so with one thing in mind. Each one of these countries was expecting the next war to be fought in Europe between NATO and the Warsaw Pact. Looking back at lessons learned during World War II by the armies of Germany, the United States, the United Kingdom, France, and the Soviet Union, a few points stand out.

During World War II, the German Army was far ahead of any other nation in optical technology for armored fighting vehicles. The Germans were the first to develop dual-powered sights. What that means is they were capable of switching from 2½ (LOW) power magnification to 5 (HIGH) power magnification by just turning a switch. They were also the first to field binocular tank sights on some of their later model Panthers and Tiger tanks. The vast majority of other countries in the world never adopted binocular sights for their tanks. They used monocular sights. The monocular sight is similar to a telescope. The Gunners Auxiliary Sight on the M1-series tank is a good example of a monocular tank sight.

The German tank brigades recorded some of the longest tank kills of WWII. There are numerous reports from the 2d Armored Division about tank-versus-tank engagements against the Germans:

"At about 1230 hrs. on the 20th of November 1944, in the vicinity of Ederen, Germany, Lt. Shrink stated his vehicle was destroyed by a tank firing at a range of approximately 1500 yards. He could see the position from which the enemy fire was coming, but could not pick it up in his sight. 1300 hrs. on 4 January 1945, elements of Company A, in support of Task Force X, which was attached to CCB, were fired upon from a Mk V which was at least 3,000 yards from their position. They could not pick up the gun through their sights. This same German gun had already destroyed four M4 tanks in the vicinity."

These and more examples can be found in an after-action report prepared for General of the Army Dwight D. Eisenhower by Major General I.D. White, Commanding General, 2d Armored Division, 1945.

American tanks were engaged and destroyed at ranges in excess of 1,200 to 1,500 yards. Often the American tanks only observed the muzzle flashes at those ranges. The success the Germans had at ranges over 1,000 yards was the exception, not the norm. Over 78 percent of the recorded tank engagements which resulted in a catastrophic kill were between the ranges of 300 and 500 yards. These close-range engagements were due to two factors. First, the allied forces could not easily acquire targets at ranges in excess of 800 yards, due to the inadequacy of their sights. The second factor was, if they did acquire a target between the ranges of 900 and 1,100 yards, their engagement would usually end in a ricochet off the more heavily armored German tanks.

The Army learned two lessons from its tank operations during WWII. If we expected to face the enemy and win long-range standoff engagements, we must do two things: Develop more powerful sights for our armored fighting vehicles, and develop armament and munitions that will equal or surpass those of our adversaries. Currently, we have the armament and munitions that will match or surpass any possible adversary. I will address sights which match the capabilities of the armament and munitions later.

At the same time we were fighting the Germans on the Western Front, the Soviets were fighting the Germans on the Eastern Front. The Soviets developed the T-34-series tank to support their doctrine. Powerful optics were not a critical issue to the Russians, who placed higher priorities on mobility and mass. As one author described it, "The Soviet armor accords with the requirement of a doctrine of overwhelming firepower followed by rapid advance of massed armor. All of the Soviet equipment is kept relatively simple so that the largely conscript army can absorb both technical and tactical training in a two-year span of service. This does not mean that the Soviet armor as a whole is less effective than that of NATO. It does mean that they are prepared to accept huge losses, both kills and breakdowns, as they launch their masses of armored

fighting vehicles in a steamroller assault. It is hoped that their huge numbers will enable them to close tank-versus-tank combat ranges to within 1,300 meters, so the lack of high power optic is accepted. The Soviet Army was the first to fit a smoothbore main gun as standard, sacrificing accuracy at longer distances for superior penetration at the engagement ranges they wanted."[1]

These lessons and statistics from World War II are what laid the groundwork for the development of the armored fighting vehicles optical capabilities. The United States, the United Kingdom, France, and Germany currently all have the equivalent of a 3x10 or a 3x12 power magnification sight. The vehicles of the Soviet Union, T-54 thru T-72, all have relatively the same magnification capabilities as our systems do.

Why is it important that we look at these five countries in regards to optic and weapon capabilities? These are some of the main suppliers of MBTs to all the other countries in the world. The majority of the tanks supplied to the Third World, the Middle East, and ex-Warsaw Pact countries came from one of these sources. This all becomes more relevant when you start to look at it from a post-Cold War and post-Gulf War perspective. Up until recently, the main focus was on fighting the next major full-scale armor conflict in Europe. Now, after fighting the Gulf War in the desert with sights which had been designed for the European theater, we can make these assessments:

- Our armament and service munitions exceeded prior expectations of the research and development teams that procured it; the 120-mm smoothbore cannon and service munitions repeatedly engaged and destroyed targets in excess of 3,100 meters.
- The Laser Range Finder (LRF) on the M1-series tank can accurately range objects out to 4,000 meters.
- The M1's optics do not fully maximize the capabilities of the 120-mm armament and its service munitions. They are not strong enough to identify targets at the ranges at which the weapons can kill them.
- Enabling crews to positively identify targets at the ranges they are capable of destroying them will both increase the lethality of the tank and also greatly decrease the chances of tank-versus-tank fratricide.

My personal experience during the Gulf War as a scout platoon leader of an armored task force leads me to believe the 3x12 power optics of the Cavalry Fighting Vehicle (M3) are not as effective as they should be for operations in a desert environment. There were countless nights on OP, and mornings during stand-to, when I could observe friendly forces moving within the brigade sector within the planning ranges of our weapons. However, until they closed to within 2,200 meters or closer, we could not positively identify what type of vehicle we were observing. This hits home to those who traditionally operate forward of the main force engagement areas. It really generates concern when we must pass back through that force. This is usually done through or around the main forces engagement areas while in contact with the enemy.

The one country that developed its own MBT in anticipation of fighting in a desert environment is Israel. Israel developed a tank suited for desert fighting, based on the lessons the Israelis had learned over the past 30 years.

The Israelis developed the Merkava (Hebrew for chariot) for two reasons. One reason is that only Israel gives protection a higher priority than firepower and mobility. Israel is a small country with a small population. "They cannot afford losses that would be tolerable even in a Western army. The second factor is, in all their wars, the Israelis suffered from embargoes on supplies, and they were determined to reduce their reliance on foreign suppliers as much as possible."[2] I bring Israel into the picture because it is the only Middle East country which is not fighting with someone else's purchased equipment, like Iraq, Iran, Saudi Arabia, and Egypt. Israel currently has the most powerful sights on their MBT. The power of their sights is not published; however, it is believed to be approximately 4x20 power.[3] Would this not be a more suitable powered sight for a multi-regional fighting force?

In conclusion, since the end of the Cold War and the United States' involvement in the Gulf War, our national strategy and the strategy of all NATO countries has rapidly shifted. The Soviet Union as the main threat and Europe as the battleground are no longer the primary focus. A strategy which can react rapidly with large conventional forces anywhere in the world is what we need now. Our forces must be suited for any geographical region. To successfully prepare for our next conflict, we must not only change personnel and equipment organization, we must upgrade our optical sights on our weapons systems to successfully enhance the capabilities of our weapons systems.

Notes

[1]Noel Ayliffe-Jones, *World Tanks and Reconnaissance Vehicles Since 1945*, Hippocrene Books, Inc., N.Y., 1984, p. 12.

[2]Christopher Foss and Ian Hogg, *Battlefield: The Weapons of Modern Warfare*, Orbis Book Publishing Corp., Florence, 1985.

[3]Ibid.

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Additionally, weather permitting, the division's aviation assets provide mobility for its ground troops and a first-rate antitank capability. But hubris aside, and giving the infantry full credit for its antiarmor punch, the 82d has no vehicles that can drop with paratroopers and then attack, hold ground against, and slug it out with modern main battle tanks. A determined Iraqi armor attack in the first hours of DESERT SHIELD would have been an American disaster.[2] Perhaps it still would have been a disaster even if a small, U.S. unit of main battle tanks were present, but a few M1 Abrams would give paratroop commanders options they don't have now.

Furthermore, if, as General Edward Meyer, former Army Chief of Staff, has stated, Operation DESERT SHIELD is the paradigm for future U.S. military actions,[3] the 82d will need main battle tanks on future drop zones. Indeed, after little involvement in the Grenada and Panama invasions, Armor branch has had difficulty justifying its forces since the Berlin Wall came down;[4] but Saddam Hussein taught us the Army must learn to emplace main battle tanks in strategic, airborne operations. Tanks and crews simply must get to the fight in the initial assault to remain a legitimate, warfighting asset;[5] and the best means of getting 70 tons of tank, equipment, and soldiers on the ground with an airborne division is glider delivery.

This is not a new idea. During and after World War II, Germany, the United States, Great Britain, Japan, and Russia produced tank-carrying gliders.

A sketchy, war-glider history

As early as the 1920s, Russian glider pilots delivered supplies to remote settlements without aircraft-landing strips.

Germany, prohibited from having a force of powered aircraft after World War I, learned gliding from Russia and created a tightly supervised system of sport-gliding clubs. Members later joined the *Luftwaffe*, the best sport-glider pilots sometimes becoming combat-glider pilots.

The first German war glider was the *Deutsche Forschungsanstalt Fur Segelflug* (DFS) 230, an adaptation of a scientific experiment using a glider called the "Obs" to study the weather. High-winged, with jettisonable wheels and a plywood-skid landing gear, the DFS 230 cost about 7,500 Deutschmarks, the price of manufacturing ten parachutes.[6]

Predictably, most German generals didn't like gliders. They viewed the engineless airplanes as unwelcome, and possibly unfair, competition for their parachutist corps.[7] After all, gliders could slide silently for miles after they cut loose from their tugs, land quickly in small fields, and discharge nine-soldier, combat-ready squads.[8]

In contrast, parachutists had to jump from noisy transports that passed directly over the drop zones. Once on the ground, they had to get out of their harnesses and assemble from the scattered, 150- to 200-yard-long pattern in which they landed.[9] In addition, parachutists could carry no heavy equipment, but gliders could.[10]

In a demonstration for the German Army's general staff, the troop-carrying DFS 230 proved its worth. Simultaneously, ten planeloads of parachutists and ten gliders assaulted the same open field. A stiff breeze scattered the parachutists across the drop zone at considerable distances from their ammunition. But the parachutists' bad luck was the glidermen's good fortune; the wind actually helped the gliders land in close formation. The glider troopers simply climbed out of their aircraft and were ready to fight.[11]

That dramatic exhibition of gliders' surprise-attack potential inspired Adolph Hitler to attack Fort Eban Emael using the DFS 230 and new super-secret, hollow-charge explosives, which were powerful enough to destroy the fort's bomb-proof gun emplacements. On 10 and 11 May 1940, in an attack we would call a special operation, 77 infantrymen and engineers defeated more than ten times their number of Belgian soldiers at the world's strongest fort.[12]

This, the world's first glider assault, was a comedy of errors from the beginning. The tugs lost two gliders, one of which carried the ground commander, enroute to the release point. The commander of the tugs was unaware of a strong tail wind; and when the sun rose, he found himself and his gliders directly over the target instead of miles away where he was supposed to be. The gliders cut loose and dived straight down through machine-gun fire to thrilling landings atop the fort. Despite more mistakes and confusion, the assault succeeded in just more than a day and opened the route for Germany to invade France.[13]

In another daring special operation, Engineer Lieutenant Otto Skorzeny rescued Mussolini from the Hotel Campo Imperatore, more than a mile up Monte Corno in the Apennines. To the German airborne staff's dismay, Skorzeny landed his assault force by glider and flew out with the Italian dictator in an overloaded Storch observation plane.

Later, the Germans paid a heavy price in lives for their victorious airborne invasion of Crete, and Hitler put a stop to glider and parachute attacks.

Paradoxically, the Allies' experiences were almost directly opposite. Special operations with gliders usually failed, but major tactical moves, such as the initial assault of Operations MARKET GARDEN and VARSITY, succeeded brilliantly.

For example, in the D-Day invasion of Europe, the Allies launched 408 glider sorties carrying 2,611 soldiers, 221 vehicles, and 213 artillery pieces. They also launched 444 airborne sorties delivering 6,488 paratroopers. Ninety to 95 percent of the gliders

landed on or near their objectives, while only 50 percent of the paratroopers landed on or near their drop zones. The paratroopers suffered two-percent casualties in the jump; the glider troops amassed four-percent casualties on landing. Eleven glider pilots died in crashes and 30 were injured, but there was little cargo damage.[14]

Most D-Day gliders weren't equipped with cargo parachutes to slow their approaches for safe landings. As a result, German obstacles on the landing zones were a double-edged sword. They caused a few deaths, but they assisted in slowing and stopping the gliders as well.[15] In rare occurrences, heavy cargo broke loose and killed pilots who were not flying in "Griswold" protective cockpits. Some soldiers weren't wearing seat belts and suffered injuries in rough landings. Also, there were no provisions for pulling landed gliders out of the path of those that followed.[16]

Significantly from a 1990s point of view, there was no night-vision technology on D-Day; nevertheless, most glider pilots landed in the dark. As DESERT STORM combat amply demonstrated, night-vision goggles are tremendous assets when paired with well-trained, competent aviators. If World War II glider pilots had been so equipped, they'd have seen their landing zones more clearly and landed more safely.

World War II, Tank-Carrying Gliders

With France in his grasp, Hitler intended to invade England from the south in Operation *SEELÖWE*. Glider soldiers and paratroops were to play important parts in the invasion; but without heavy weapons, light infantry couldn't last long against British armor. Hitler, himself an experienced infantryman, knew he had to give his parachutists and glider troopers tanks to fight tanks.[17]

To fill the need, Messerschmitt built 200 enormous Me 321s. Dubbed the *Gigant*, or Giant, each could carry 24 tons (there were plans for a 60- to 70-ton version) or 200 combat-equipped soldiers. With a wing span 35 feet longer than a modern Boeing 707, and a cargo capacity equal to it, the *Gigant* was the largest glider ever built.[18]

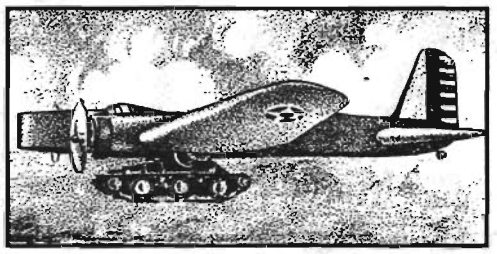
In fact, it was so big it was difficult to launch in the days of piston-engine bombers and transports. The Germans developed two systems that worked moderately well. The first was the *Troikatow*, in which three Me 110 fighters towed the *Gigant* aloft as the glider blasted itself off the ground with rockets beneath its wings. The second, successful system was the Heinkel (He) 111Z: the *Zwilling*, or twin, consisted of two He 111 bombers joined at the wing with a fifth engine added at the junction.[19]

With the termination of airborne operations, after the Crete disaster, the Germans added six engines to all existing Me 321s, creating the Me 323 transport.

The Allies' tank-carrying glider was the General Aircraft Hamilcar. Approximately the same dimensions as a B-24 Liberator, it weighed seven tons and could carry a seven- to nine-ton load.[20] The Hamilcar overwhelmed its tug, the Halifax Mark III, and later the Mark V;[21] but it performed admirably D-Day night delivering tanks, Bren-gun carriers, scout cars, and mobile Bofors guns to the invaders.[22]

Fitted with hoses to eject exhaust fumes overboard, tanks inside the Hamilcars started up in flight. Crews rode inside their vehicles as the gliders were inbound, and when the aircraft stopped, the tanks slipped their moorings and rolled out a hinged door on the nose.[23]

The Hamilcar was the most practical, most used of all the tank carriers; but there were two spectacular crashes. In an early demonstration, a pilot overshot the runway and barreled through a group of buildings. As the glider slammed to a stop, the tank inside broke its restraints and shot through the nose shell at about 80 mph. Luckily, everybody escaped injury, including the tank driver who'd just set a tracked-vehicle, land-speed record.[24] In the other crash, a Hamilcar broke apart in flight when it became trapped in its tug's turbulence. Without parachutes, all aboard the glider died.



J. Walter Christie, the American inventor whose concepts both intrigued and bedeviled the U.S. Army's Ordnance branch prior to WWII, proposed aircraft-suspended delivery of tanks. This version was proposed — and rejected — in 1933-35.

Toward the end of the war, Japan produced at least one Kokusai (Ku) 6 or Ku-7 glider, which flew with an eight-ton tank on several occasions. In desperation as the Allies approached, the army wanted the heavy glider to rush tanks to counter an expected invasion.[25]

In 1939 or 1940, the Russians actually may have put wings on a T60 light tank and flown it, but no photographs or written records exist to substantiate the experiment.[26] Tales of the flight indicate it was only marginally successful if, in fact, it ever took place. The tug's engines couldn't take the strain, and the tank had to cast off early. By starting the engine and spinning the tracks as fast as they would go, the pilot landed without injuring himself. The Germans invaded shortly after this first flight, and the Russians never completed the project.

Just suppose somebody with the power to do so decided to research and develop this admittedly radical idea. What would we wind up with if we actually made an air barge for main battle tanks? What might the modern-day Hamilcar be like?

What we need

We need a glider to deliver main battle tanks in parachute insertions.

As our Army decreases in size, our ability to deploy it quickly becomes more critical. Even more importantly, it appears the Army of the near future will have to launch any war from CONUS. Light divisions once appeared to be the answer, but now it is evident we must project tank units to increase the lethality, and thereby the safety, of deployed forces.

The M1 Abrams, in all its variations, is a durable, fast tank with state-of-the-art weaponry. It does a job that no other weapons system, including the aging M551 Sheridan and the proposed 105-mm Armored Gun System, can do — fight tank forces on equal terms. But, stating the obvious, it must be present on the battlefield to do so.

The Iraqi army did not attack in the first days of DESERT SHIELD; perhaps the next tank-heavy army the 82d faces will. The fast, heavy-metal punch of a tank unit would give the 82d's commander a credible attack or counterattack force with which to turn the "threat" into casualties.

The C-141B Starlifter is the most practical tug available today

The C-141B is the 82d's strategic-delivery aircraft; that is, it carries up to 104 paratroopers from one global theatre to another. In the same sortie, each C-141B should parachute or airland a load of people or equipment and deliver two M1 Abrams tanks and crews in a glider.

If the Air Force ever gets the C-17, it will be an even more practical tug. Carrying either one main battle tank, paratroopers, or equipment, the C-17 also should tow a glider carrying two tanks.

Incidentally, there are historical precedents for dual delivery of paratroopers and gliders. For example, in 1944 British paratroopers jumped from glider-towing, C-47 transports into Greece. The gliders released just prior to the jump and landed with heavy equipment.[27]

Pressurize the passenger compartment and cockpit

Made "on the cheap," with parts from such sources as the Steinway Piano Company, the Heinz Pickle Company, and Anheuser-Busch, World War II gliders did not have this requirement.[28] They flew at piston-engine speeds, 150 mph or less, behind tugs that rarely went above 12,000 feet.

Modern jets operate more efficiently at much higher altitudes and airspeeds; therefore, the tug must be able to operate at normal altitudes, between 30,000 and about 60,000 feet, and at near-normal airspeeds with a glider in tow.

Above 10,000 feet, air is thin, cold, and hard to breathe. To operate between 30,000 and 40,000 feet, soldiers inside the glider could exist on a pure-oxygen atmosphere in heated suits. But above 40,000 feet, humans can't survive in an unpressurized atmosphere; at 63,000 feet, the boiling point of water is 98.6° F, normal body temperature: blood would boil, and people would die.[29]

For that reason, the glider, while remaining a glider, must have a small, reliable engine, an auxiliary-power unit, to provide bleed air for pressurization and energy for refrigeration of that air. The same engine could power navigation, communications, flight-control, and perhaps night-vision equipment. True, the tank's engine could do it, but only with extensive modification; and that engine is more powerful and uses more fuel than necessary for the task.

It must be durable as well as light

Most glider landings will be on airhead runways. After all, the 82d Airborne Division can force entry into a theater by taking an airhead; and in other cases, such as in Saudi Arabia, a host country may make an airhead available. Furthermore, the most defensible objections to using gliders in any form are the tremendous wastage during operations and equipment deterioration due to weather effects. Hence, the glider must have a long service life with durable components to make reuse possible. Rugged construction will enhance safety for tactical landings and "snatch recoveries" after discharging the cargo, too.

Because the glider must operate from both improved and unimproved areas, it may be necessary to provide alternate landing gears, perhaps retractable wheels for paved surfaces and tough, belly skids for fields or deserts. Significantly, the Hamilcar always landed on wheels, and it enjoyed remarkable success.[30]

For construction, engineers should consider carbon fibers, lithium-aluminum alloys, "glass-cockpit" instrument displays, and "fly-by-wire" flight controls to keep the weight down. This glider will carry two tanks, about 150 tons of cargo and people, so the less weight and drag the airframe itself imposes on the tug, the better.

The glider and tow rig must not interfere with aerial refueling

The glider's range will be the same as the tug's. If the tug can extend its range by refueling in flight, the glider can go farther, too.

Design the system for long-range towing

In April 1943, a Dakota towed a Waco CG-4A across the Atlantic ocean, a 28-hour flight conducted in short jumps along the northern route. The glider carried vaccines, aircraft parts, and radio components for Russia. It was a treacherous trip. Sometimes both planes flew purely on instruments; ice formed on the Waco; wild swings behind the tug and violent turbulence endangered the mis-

sion; and both glider pilots, who were experienced power-aircraft aviators, found the lack of an autopilot exhausting.[31] Tactical glider flights of World War II were much shorter than this, the only recorded transatlantic glider tow.

But the new Hamilcar must be a strategic-delivery air barge. A long trip in a tank-carrying glider will be the norm, not the exception. Something like an instrument landing system, in which the pilot follows a beamed signal to the ground, combined with a laser-designator system, useful only under cloudless conditions, could assist in maintaining position behind the tug, especially if combined with a computer-operated autopilot. Army Pathfinders could emplace a similar transmitter or designator on the landing zone, and the glider could follow the signal to land even under instrument-flight conditions. Such a system would reduce a major complaint about gliders, which is they cannot climb out in the event of a missed approach.

Towing the glider must not interfere with paratrooper or cargo drops

Most likely, the glider will release before the tug arrives at a drop zone. In that event, only the towing hardware inside the C-141B or C-17 could be a hazard. For that reason, it must not be obtrusive, and it must not take up space in the cargo bay.

If the tow line extends from a point above the tug's exit points, even a glider in tow will not be a problem during a jump or airdrop. This is because gliders usually fly in "high tow" to avoid turbulence, and a glider above a jumper or cargo presents no hazard.

Full-fledged Army aviators must fly the gliders

These aircraft will be at least as tricky to fly, especially into night-tactical landing zones, as anything the Army has now. The intricacies of glider operations will require skill, dedication, and professional ability. Initially in the program's development, only after a successful tour of duty in a tactical-helicopter unit, should an aviator be permitted to volunteer for service in tank-carrying gliders.

Temporarily stranded glider pilots must never become troublesome to the ground commander but instead must be combat assets.[32] Glider pilots garnered from the ranks of experienced, helicopter aviators, can be immensely valuable to a quickly-deployed airborne insertion. A few spare feet of space in the glider could hold a small helicopter, perhaps an OH-58D, with which the glider pilot becomes an attack-scout aviator upon arrival at the landing zone.

Most important of all, this must be an Army program. The Air Force won't want it; in fact, with the exception of a few adventurous volunteers, Air Force pilots probably will bridle at the idea of towing 160-or-so tons of glider for hours at a time, at least at first. Later, when the economy of delivering more than twice their C-141B's maximum load, at the cost of an increase in a single plane's fuel consumption and a reduction in airspeed becomes evident, they'll accept the towing mission.

'Don't believe it's possible?' Ever see pictures of the Space Shuttle on its transport? Remember, today's engines are a hundred times more powerful than the World War II piston engines that delivered tank-carrying gliders on D-Day.

An argument with the devil's advocate

d. Advocate: If the tow plane crashes, we'll lose twice the load we would with the C-141B or C-17 alone. Additionally, major or minor problems in the tow plane could force the crew to release the glider. On the other hand, if a plane load of paratroopers has to turn back, the soldiers inside go with it.

Reply: Yes, but fuel savings, more than twice the cargo load, and historically low accident rates take the steam out of that argument. Tank-carrying gliders still make good sense.

d. Advocate: What if the glider and the tow plane get shot down? The parachute rule is, "If anybody has one, we all have them." World War II glider pilots wore parachutes in training, but not in combat. Paratroopers had a good chance to jump to safety, a chance denied to glider troops.

Reply: Okay, there'll be two aviators and eight tank-crew members aboard the glider. So provide a parachute and survival gear, life rafts and such, for everybody, and give 'em all a quick-exit route.

d. Advocate: Don't forget the human element. The glider pilots can gum up the works. They can cut loose at any time during the mission whether for a good reason or out of cowardice. It's been done.

Reply: Sure, it's been done. But World War II glider pilots on both sides earned heroic reputations for landing on their objectives. Well-trained, properly briefed aviators do their jobs as well as any other soldiers.

d. Advocate: Can you imagine what a great target the glider-and-tow combination would be for a fighter? Admittedly, the C-141B is pretty tempting all by itself, especially when it's inbound over a drop zone, but maybe the fighter pilots who clear the air corridor for the drop aircraft would do an adequate job for the combination. Come to think of it, the glider might be able to split off and land undetected somewhere along the tug's flight route while the transport continues to an overt objective. Okay, I withdraw the objection.

But finally, there's the question of careers. Paratroopers have better ones than glider riders, especially if they go to combat.

Reply: Maybe so, but Aviation branch and Armor branch will man-

age the careers of modern-day glider aviators and tankers. The branches must take care of their soldiers.

Enough, already. Smart commanders and their staffs can address each of your objections.

This glider will have one primary job: Deliver two M1 Abrams tanks during parachute operations. It could land right on the drop zone; or capitalizing on the Abrams' ground speed, the gliders could land several miles away, and the tanks could arrive on the drop zone or attack an objective before the paratroopers assemble and move out.

The paratroop commander probably will appreciate that. The Chief of Armor Branch almost certainly will be pleased to have a unit of main battle tanks with less than 48-hours global reach. Additionally, Army Aviation will have another weapons system with which to support strategic operations.

Perhaps we should look into it, see if it's possible, maybe even practical. We know we need main battle tanks as part of airborne operations, and gliders are a workable method of delivering them.

Besides, we can't do it with anything we have today.

Notes

[1]James B. Mrazek, *The Glider War*, New York, St. Martin's Press, Inc., 1975, p. 285.

[2]Lee Ewing, "In the Kill Zone," *Army Times*, 24 September 1990, p. 14.

[3]Stephen Budiansky, Carla Anne Robbins, Bruce B. Auster, and Peter Cary, "Lessons from Desert Shield," *U.S. News & World Report*, 109, September 10, 1990, p. 33.

[4]James T. Currie, "A New Era for Mechanized Forces," *Army*, 40, September 1990, pp. 6-7: "Without the threat of massed hordes of Warsaw Pact armor streaming through the Fulda Gap and across the North German plain, heavy armor divisions have lost much of their *raison d'etre*, and no attempt to give armor some other mission that more accurately reflects the real world today will change that. . . . Low-intensity conflict, however, is precisely the type of conflict the Army is most likely to see." Robert R. Leonhard, "Gutting of Mech Forces Could Prove Costly Mistake," *Army*, 40, July 1990, p. 11: "Unfortunately, we are charging headlong into what may be an irreversable mistake: the disassembly of our mechanized forces." LJB, "Iraq Moves Could Inspire More Realism in Future Force Views," *Army*, 40, September 1990, p. 15: "For example, there are those who contend that the need for a heavy tank evaporated with the possibility of war with the Soviet Union in Europe. Brigade-size light forces units can handle the kind of piddling little firefights we can expect from now on, one of the popular opinions holds."

[5]Budiansky, p. 33. "In a speech delivered the day Iraqi tanks rolled into Kuwait, President Bush underscored this new military threat: 'We are separated from many of our most important allies and interests by thousands of miles of water. And in many of the conflicts we could face, we may not have the luxury of matching manpower with pre-positioned materiel. . . We will need forces that give us global reach'."

[6]James E. Mrazek, *The Fall of Eben Emael*, 1970, pp. 37-38.

[7]Ibid., p. 39.

[8]Ibid., p. 31.

[9]Ibid. Mrazek's figures were based on performance of World War II aircraft, which carried fewer paratroopers and dropped them at lower speeds than today's transports. Current airdrop speed for personnel at 800 feet above ground level, the lowest authorized peacetime drop altitude, is 130 knots. At that airspeed, the spread between individual jumpers exiting the same aircraft at one-second intervals is 66.3 meters, rounded up to 67 meters for calculation. Using that figure, a 1,000-meter drop zone can accommodate only 14 jumpers.

[10]John Weeks, *The Airborne Soldier*, Poole & Dorset, Blandford Press, 1982, p. 100.

[11]Mrazek, *Eben Emael*, p. 39.

[12]Ibid., p. 183.

[13]Cajus Bekker, *The Luftwaffe War Diaries*, Garden City, New York, Doubleday & Company, Inc., 1966, p. 96.

[14]Mrazek, *Glider War*, pp. 196-197.

[15]John R. Galvin, *Air Assault*, New York, Hawthorn Books, Inc., 1969, p. 167.

[16]Mrazek, *Glider War*, p. 196.

[17]Ibid., 34.

[18]Ibid., 34, 35, 36.

[19]Ibid., 35-36.

[20]Humphrey Wynn and Susan Young, *Prelude to Overlord*, Shrewsbury, England, Livesey Ltd., 1984, p. 67.

[21]Alan Lloyd, *The Gliders*, Nashville, The Battery Press, 1982, p. 54; and Mrazek, *Glider War*, p. 45.

[22]Wynn, p. 67.

[23]Lloyd, p. 55.

[24]Mrazek, *Glider War*, p. 49.

[25]R.J. Francillon, *Japanese Aircraft of the Pacific War*, 1979, p. 485.

[26]Monroe Hurwitz, National Air and Space Museum, Smithsonian Institution, Archives Division, Washington, D.C., Unpublished Letter dated October 18, 1990.

[27]War Department Film, *Airborne Invasion of Greece*, Washington, D.C., National Archives Motion Picture Collection, 1944(?).

[28]Mrazek, *Glider War*, p. 58. Mrazek writes there were more than 115 subcontractors involved in producing the Waco CG-4A glider.

[29]*How in the World?*, Pleasantville, New York, The Reader's Digest Association, Inc., 1990, p. 259.

[30]Wynn, p. 67.

[31]Mrazek, *Glider War*, pp. 267-268.

[32]Ibid., p. 284. Mrazek cites problems with command among U.S. glider pilots after they landed. Unlike British glider pilots, who underwent extensive commando-type training and fought gallantly as infantrymen, the Americans were largely underfoot. Many times they flew into battle without overnight gear. Sometimes they guarded prisoners, but the majority of them just drifted around the battlefield attempting to find a way back to England.

Other Sources Consulted

Dank, Milton. *The Glider Gang; An Eyewitness History of WW II Glider Combat*. Boston: Lippincott, 1977.

"Here Comes the Armor." *Army Times*, 10 September 1990, p. 21.

Huston, James A., *Out of the Blue*. Indiana: Purdue Research Foundation, 1972.

Matthews, William, "Heavy Metal." *Army Times*, 10 September 1990, pp. 4, 69.

Major E. C. Parrish III is a Distinguished Military Graduate of Pennsylvania State University and holds an M.A. in journalism from the University of Missouri-Columbia. His 18 years of military service include combat in Grenada and Iraq, company command in the 160th Special Operations Aviation Regiment (Airborne), and assignment to the 1st Battalion (Ranger), 75th Infantry. A graduate of the Command and General Staff College and Armor Officer Advanced Course, he is assigned to HQ, U.S. Army Recruiting Command, Fort Knox, Ky. Additionally, he has authored seven magazine articles supporting the President's 50th Anniversary of World War II Commemorative Committee. His first novel, *Children of Mist*, will be published this fall by Seabar Publishing, Salt Lake City, Utah.

Letters (Continued from Page 3)

the tank commander and gunner to learn to work together as a team.

To sum up, I feel that, as the training cycles are presently presented, there needs to be more time devoted to all the aspects of Being All You Can Be.

SSG WARREN REINHARDT
Trp B, 1st Sqdn, 104th Cav
PAARNG
Philadelphia, Pa.

It's Time to Reevaluate Retention Criteria

Dear Sir:

I received my commission as an Armor officer in May 1987. After Armor Officer Basic at Fort Knox, I went to Bamberg, Germany, where I spent 39 months as a tank and scout platoon leader in the 2d ACR along the East-West German border. In December 1990, I deployed to Operation DESERT SHIELD/STORM with G Troop, 2/2 ACR as a scout platoon leader. My platoon helped lead the way into Iraq for VII Corps. My platoon excelled, and I was recognized for valor when I received the Silver Star Medal.

After returning from Iraq, I was notified by DA that I did not pass the Lieutenant Retention Board. Surprised and disappointed, I appealed the results and won a "relook." I PCS moved to my advance course and waited for the "relook" results. In June 1992, I was again notified by DA that I was not retained.

I have trouble understanding how the Army can recognize courage and excellence on the battlefield by awarding the Silver Star, yet decide the same soldier is not good enough to be retained on active duty. I have a solid military record. The only discriminator against me is one three-month OER in which I received a three-block rating, just below center of mass. My senior rater was a lieutenant colonel who made his personal dislike for me very clear, to fellow officers and soldiers alike. I believe he was determined to end my career.

I realize there is a reduction in force now and that I am not the only victim of the drawdown. I am angered that one three-month OER by an openly biased rater could override my proven abilities in combat as a leader of soldiers. Isn't combat what the Army trains for 365 days of the year?

I come from a long line of distinguished Armor/Cavalry officers, and it is unfortunate that I will not carry on this proud tradition. My advice to Armor leaders of tomorrow is to not take lightly your obligations as raters of subordinate officers; it is a great responsibility to be taken seriously if Armor is to keep quality leaders.

I will go on to a successful civilian career. I strongly feel it is time the Army reevaluated who is chosen for retention and why. I cannot help wondering... if a Silver Star for heroism does not qualify a combat leader for retention on active duty, what does?

1LT PAUL D. HAINS
Sierra Vista, Ariz.

Corrections to German Unit Organization

Dear Sir:

Captain Benson's article, "The Battle of Arras" (May-June 1992 *ARMOR*), was an interesting view of the battle. However, I was disappointed in his source materials for the German Order of Battle. Samuel Mitcham's *Hitler's Legions: The German Order of Battle, World War II* only listed the units in their 1944 guise. Arras took place in 1940. I include the following corrections:

•Until November 1942, all infantry regiments within the panzer division were known as rifle regiments (Schuetzen-Regimenter). Source: Peter Stahl's *PANZER German Armor 1935-1945.*

•The SS-Totenkopf Division was a motorized infantry division until it was converted in 1943 into a panzer division. Its components were:

SS-Totenkopf-Infanterie-Regiment 1
SS-Totenkopf-Infanterie-Regiment 2
SS-Totenkopf-Infanterie-Regiment 3
SS-Totenkopf-Aufklaerungs-Abteilung
SS-Totenkopf-Panzerabwehr-Abteilung
SS-Totenkopf-Artillerie-Regiment
SS-Totenkopf-Pionier-Bataillon
SS-Totenkopf-Nachrichten-Abteilung

There were no antiaircraft or rocket projector battalions until 1944. Source: Dr. K.-G. Klietmann's *DIE WAFFEN-SS: eine Dokumentation.*

On April 4, 1940, SS-Totenkopf-Division was inspected by the 2d Army commander for the first time. He was under the impression that the division was organized and equipped like a Czech foot division. Of Germany's 139 infantry divisions, only seven were motorized. (Granted that the small arms were of Czech origin.) Source: George Stein's *The Waffen-SS: Hitler's Elite Guard at War.*

DAVE RIETHMEIER
(Formerly of 3d Bn, 7th Inf, 199th LIB)
Rochester, Mich.

50th Anniversary
12th Armored Div.

Crews of M5 light tanks of the 12th AD's 92d Cavalry Recon Sqdn. mount up in Bramath, France as they prepare to attack a German bridgehead north of Strasbourg.

12th AD's "Hellcats" Bounced the Danube

Landing in France five months after D-Day, the 12th Armored Division endured 160 days of battle, yet received little credit during much of that period because of security precautions. From the day the Hellcats arrived in eastern France until the war ended in May, 1945, at least one of the division's subunits was in the front line, in contact with an enemy.

In the months following the Normandy landing, the 4th Armored Division had frequently been the spearhead of Patton's Third Army in its drive toward the Rhine. So, when the 12th took up the 4th's positions near the Maginot Line in early December, expectations were high.

The 12th AD arrived in Alsace-Lorraine just as the Germans were preparing a major campaign in the area. The Ardennes offensive had failed, but the Germans knew that Allied units had been diverted north to stem the attack, weakening the forces in Lorraine. Operation NORDWIND was a plan to create a second "Bulge" and retake the city of Strasbourg. German units in the Colmar pocket, south of Strasbourg, would drive north while newly refitted units poured through another bridgehead, at Gambsheim, north of Strasbourg. During the first week of the new year, elements of two panzer divisions and four panzer grenadier divisions moved into place, in what was thought to be a quiet sector. The Hellcats were to discover, in their first battles, that they were facing major combat units, rested and refitted for an offensive that could have grave strategic consequences.

The 12th Armored "attacked this force, uncovered its true strength, contained its first offensive effort, and inflicted such substantial losses upon it that the enemy's further offensive efforts were never successful," according to the account in *The Hellcats*, a recent unit history. Much of this fighting took place in terrible terrain for tanks, during one of the coldest winters in modern European history — there were only three days of good flying weather that month. And the Hellcats paid dearly: although they inflicted heavy casualties on the enemy, the Seventh Army rated the 12th AD "at one-third effective strength and unsatisfactory for combat" as the month ended. It was a month of remarkable statistics: 88 KIAs, 626 WIAs, 545 MIAs, more than 1,000 enlisted replacements, 19 Silver Stars, 48 Bronze Stars, 1,400 CIBs, and 170 Purple Hearts. The division's 43d Tank Battalion was virtually wiped out in the battles at Herrlisheim.

In early February, the Hellcats attacked another German salient, the Colmar pocket, linking up with French troops on February 5. It was one of the rare instances that a U.S. unit fought under French command. Then the Hellcats refitted, returning to combat in mid-March.

The 12th AD went back on the offensive on 17 March, now as part of the XX Corps of Patton's Third Army. The Hellcats became the Allies' "Mystery Division" for the 70-mile drive from Trier to the Rhine River. Patches were removed from uniforms and unit vehicle designations were painted out for security reasons. The Allied Command didn't want the Germans to know there was a relatively new unit fighting its way east across the Saar-Palatinate. The Hellcats moved quickly, 25 miles a day, and surprised a lot of enemy troops, bagging 2,500 prisoners on March 19th, along with three ammo dumps, a supply train, 400 horses, and 700

World War II Campaigns

Rhineland
Ardennes-Alsace
Central Europe

World War II Commanders

MG Carlos E. Brewer
September 1942-August 1944

MG Douglass T. Greene
August 1944-September 1944

MG Roderick R. Allen
September 1944-July 1945

trucks and wagons. Two days later, the Hellcats' 17th Armored Infantry Battalion reached the Rhine.

Returned again to Seventh Army control, the 12th AD fought south along the west bank of the Rhine, including an attack on the German chemical center at Ludwigshaven. By March 28, a pontoon bridge at Worms was available, and the 12th AD again began driving west toward Wurzburg and the important industrial center at Schweinfurt.

The Hellcats took 7,200 prisoners in March and suffered 77 KIA, 73 MIA, and 318 WIA.

The pace increased in April, the penultimate month of the war in Europe, with the Hellcats now oriented south and east in the drive through Bavaria. They fought their way through 500 towns and villages that month. In many of these towns, resistance was brief before white flags emerged: the 12th AD captured another 10,000 POWs in April.

The retreating Germans would stop in a town, offer resistance until artillery, tank fire, or fighter-bombers intervened, then surrender or scurry to the next village to repeat the process. In some of these battles, diehard SS troops would put up a more stubborn fight, but clearly, the Thousand Year Reich was nearing its final days.

The rapid pace of combat brought luck to the Hellcats at Dillingen, Germany, where they surprised German units prepared to blow the Danube River bridge. While the 43d Tank Battalion's guns kept German soldiers from the southern side of the span, infantry of the 66th AIB raced across, securing the bridge before the enemy could detonate the six 500-pound bombs rigged to blow it up. Unit historians were quick to note that the Hellcats were the first invading force in history to cross the Danube. The objective now was a race to the Brenner Pass in the Alps, where the 12th was to block the retreat of German forces still holding out in Italy.

For years previously, German propaganda had boasted that, rather than be overwhelmed, the Nazi government would retreat to, and survive in, this area of Germany, which the Nazis called The National Redoubt. Heavy fighting was always expected to be a possibility against diehard elements holed up in this mountainous area. But there were few combat surprises. The real surprises were the camps, in an area northwest of Munich, including the complex around Dachau and Landsberg. The 12th AD liberated eleven prison camps, some housing Allied POWs, others political prisoners, and the rest the last, pitiful victims of Hitler's Final Solution.

Three weeks after the bloody battle at Herrlisheim, a recovery crew of the 43d Tank Battalion retrieves a knocked-out Sherman from the battlefield.

The 12th AD liberated 8,500 prisoners at one camp that month, including 1,500 Americans. Another camp housed high-profile political prisoners, including two former premiers of France, Reynaud and Daladier; two former French Army commanders, Generals Weyand and Gamelin; Michael Clemenceau, son of France's prime minister during WWI; the international tennis star, Jean Borotra; and General Charles DeGaulle's sister.

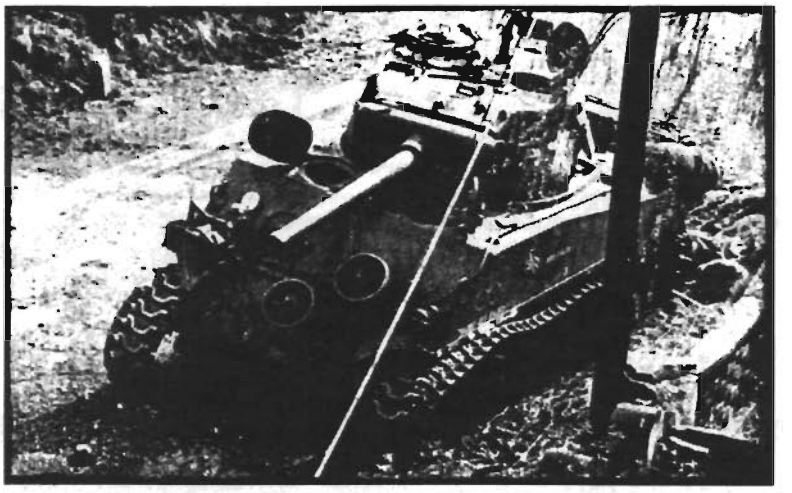
The Hellcats of the 12th AD were pretty much inured to the horror of combat by late April, 1945, but nothing could prepare them for what they encountered in the camps around Landsberg. Their rapid crossing of the Danube had upset the Nazis' timetable, and there had been no time to move the prisoners under the pressure of the Allied advance.

This is how COL Charles Gildart, CO of division artillery, described it in a letter home:

"The enormity of the Nazi crimes against political and military prisoners exceeds anything we had calculated. They are simply beyond description and, after seeing some of them, I can hardly realize what I have seen. Russians, Poles, and Jews have been killed by slow torture, literally by the millions. The dark pages of the Inquisition have nothing to equal it, search as you will. ...I despise the German comfortable rich and bourgeois more every day as the entire nauseating story is uncovered by our advancing troops. However loathe they might have been to soil their hands in the actual extermination of these helpless unfortunates, they sat back, enjoyed life, and sent their sons out to kill us while this was going on. So great a stench could not have failed to reach their nostrils sometime."

Prepared by Jon Clemens, *ARMOR* Managing Editor, based on Shelby Stanton's *Order of Battle, U.S. Army WWII* and Turner Publishing's *The Hellcats,* a history of the 12th Armored Division.

At right, 13th AD Sherman knocked out by 88-mm antitank gun and panzerfaust fire.



50th Anniversary - 13th Armored Division

Drawing Only One Month in Combat "Black Cats" Still Got Their Licks In

This October, the 13th Armored Division will celebrate its 50th anniversary. The "Black Cats" were called "California's Own." During World War II, they organized in California and went on to Europe to help in the defeat of Nazi Germany.

General Orders, Headquarters Armored Force, activated the 13th Armored Division on 15 October 1942, at Camp Beale, California. Experienced cadre from the 5th and 8th Armored Divisions formed the nucleus of the new division. Men and equipment quickly arrived to bring the 13th up to strength. The people of California developed a special attachment to the "Black Cats." Governor Earl Warren christened the tanks of the new division, and several Hollywood stars made themselves available for social events. Battalions from the 13th participated in the alerts of the West Coast Defense Command. MG John B. Wogan, the 13th's commander, instituted a rugged program of progressive training. Steadily, the "Black Cats" grew combat ready. In the fall of 1943, the 13th took part in the IV Corps Oregon Manuevers. For seven weeks, the division lived tactically in the field and maneuvered as part of a larger force. Then in December 1943, the 13th moved to Camp Bowie, Texas. There, the "Black Cats" spent one more year preparing for combat.

In January 1945, the 13th moved by rail to Camp Kilmer, New Jersey. Rumors about the German Ardennes offensive filled the air. For three days, the "Black Cats" prepared for overseas movement.

Finally, the division sailed from New York harbor on 17 January 1945. The *U.S.S. Marine Dragon, U.S.S. Marine Devil, U.S.S. Marine Raven, U.S.S. Mormacmoon,* and *S.S. Sea Quail* joined a convoy lead by the battleship, *H.M.S. Nelson.* After a few days, the *Marine Devil* could not keep up, and she returned to New York with a lone destroyer escort. Men and equipment transferred to the *U.S.A.T. George Washington* and set out once again. By 7 February 1945, the entire division had disembarked at La Havre, France.

For two months, the "Black Cats" served occupation duty and prepared for battle. They policed towns and searched for weapons. Patrols scoured the woods for bypassed German troops. The engineer battalions removed mines and repaired bridges. Finally, in April 1945, the 13th engaged in combat as a division. On 8 April 1945, the "Black Cats" attacked across the Sieg River into the Ruhr Pocket. Combat Command A seized Siegburg, and Combat Command B established a bridgehead across the Agger River. Despite determined German resistance, the "Black Cats" smashed through roadblocks and pressed north into the center of the pocket. By 17 April 1945, the 13th had forced crossings of the Duhnn and Wupper Rivers, captured Duisburg, and made contact with the advancing Ninth Army. Organized German resistance ceased. Sadly, MG Wogan was severely wounded by enemy rifle fire. MG John Millikin then took command of the 13th.

World War II Commanders

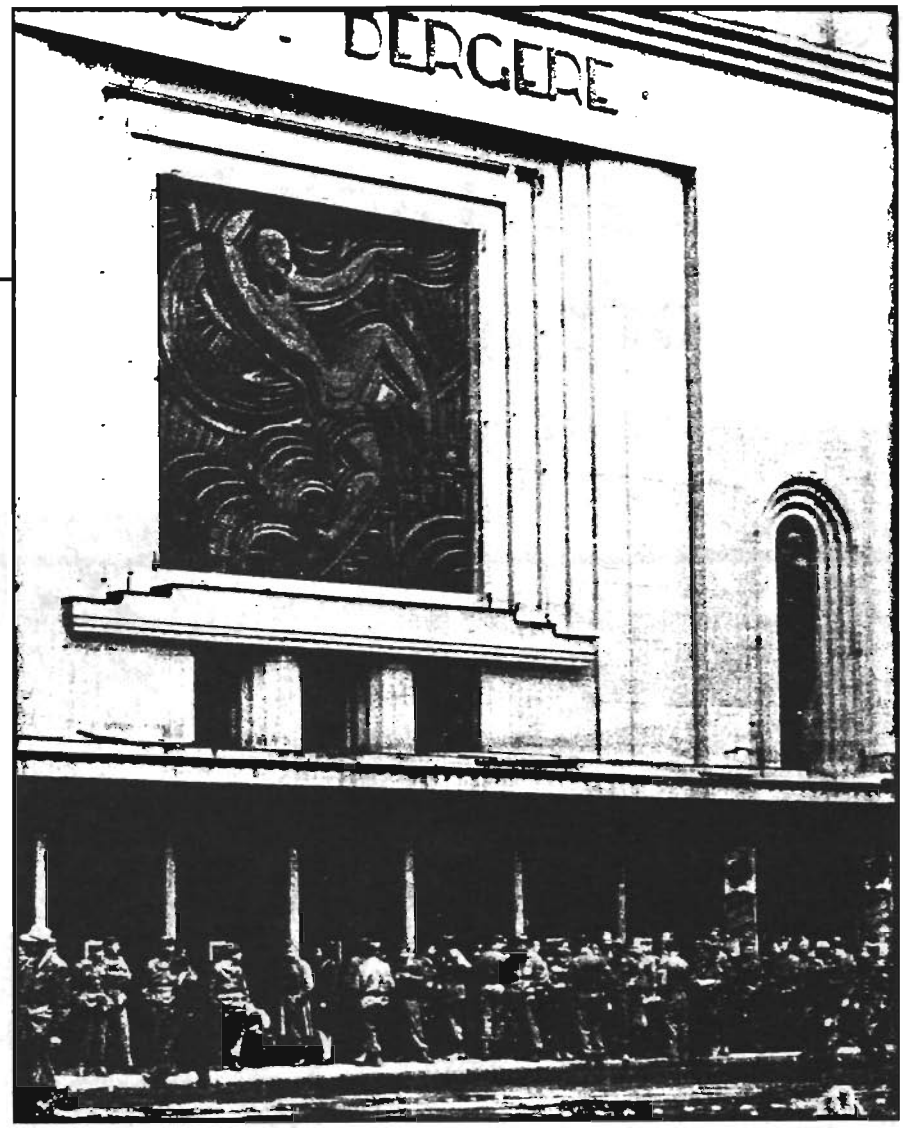
MG John B. Wogan
October 1942-April 1945

MG John Millikin
April 1945-May 1945

World War II Campaigns

Rhineland

Central Europe



On leave in liberated Paris, Hellcats line up for tickets to the famous Folies Bergere.

On 21 April 1945, the 13th joined LTG Patton's Third Army for the attack into Bavaria. The "Black Cats" marched 300 miles and crossed the Danube River on bridges provided by the 65th and 71st Infantry Divisions. Once on the south bank, the division attacked with three columns abreast and swiftly reached the Isar River. The Germans tried unsuccessfully to establish a defense behind this obstacle. However, the "Black Cats" waded waist-deep through the swift current at Plattling to force the railway bridge. At Mamming, they scaled the girders of a demolished bridge to cross and capture the town. They even used assault boats to cross at Landau and establish a bridgehead. The 13th held these bridgeheads against fierce counterattacks until the engineers bridged the Isar. Then, the division set out with three columns abreast for the Inn River. At Tann, the 13th accepted the surrender of 50,000 Hungarians. The "Black Cats" also liberated the Hohenwarth Allied prisoner of war camp, and captured the Austrian city of Braunau. This ended the battle of central Europe for the 13th. On 7 May 1945, hostilities ended.

For two months, the "Black Cats" served occupation duty. The soldiers apprehended enemy prisoners and maintained the law. Training and thorough maintenance continued. The 13th expected to deploy to the Pacific Theater. At the end of June 1945, the 13th moved to Camp Old Gold in Normandy, France. The division processed for redeployment and boarded ships at La Havre. On 14 July 1945, the *U.S.S. Explorer, U.S.S. General McRae, U.S.S. General Black,* and the Dutch ship *Noordham* carried the 13th back to the United States. After a 30-day furlough, the "Black Cats" assembled at Camp Cooke, California. Fortunately, the unexpected Japanese surrender canceled plans for a Pacific deployment. The city of Los Angeles proclaimed a "13th Armored Division Week." Governor Earl Warren presented the division with a Citation of Merit. Scores of film and radio stars honored the "Black Cats" at a victory rally at the Hollywood Bowl. "California's Own" was welcomed home. Finally, the 13th Armored Division was inactivated on 15 November 1945. Since then, the "Black Cats" have maintained an active veterans association.

This unit history was researched and prepared by Captain John Buckheit during his temporary assignment to *ARMOR* Magazine in Summer 1990.

Depth and Synchronization at the Battle of Heartbreak Ridge

The 72d Tank Battalion in Operation TOUCHDOWN

by Captain Scott D. Aiken, USMC

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

The application of what is now the AirLand Battle tenets of depth and synchronization resulted in the success of the 72d Tank Battalion in Operation TOUCHDOWN on 10-12 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 logistical plans.

Early in the autumn of 1951, General 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. As shown on Map 1, 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 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 communications, 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

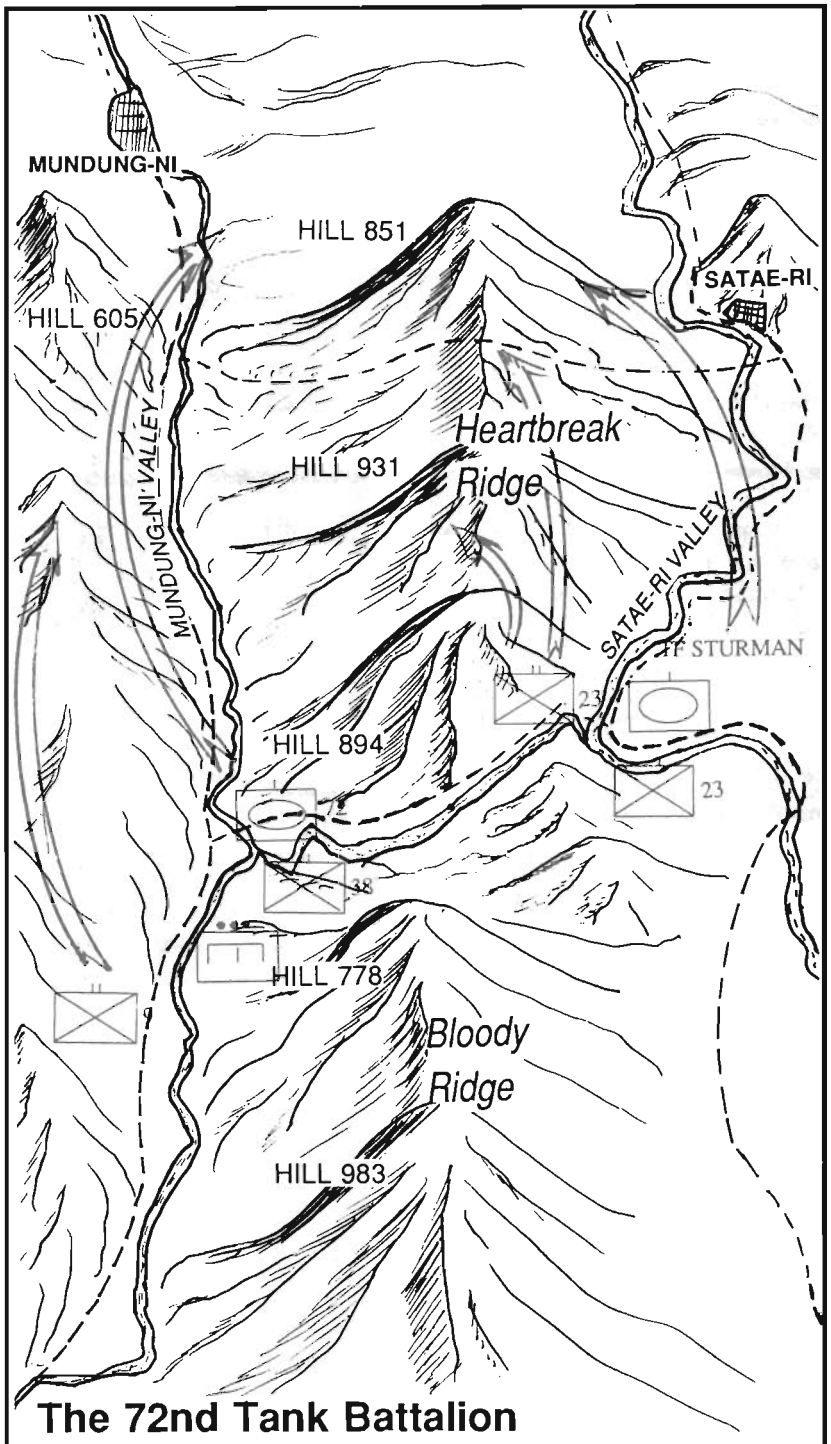
be hard pressed to move reinforcements from one sector to another.[6]

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 his 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 five 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



The 72nd Tank Battalion

At the Battle of Heartbreak Ridge

Map 1

enemy positions in the hills overlooking the valley where vital engineer projects were being conducted. This suppression allowed the 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 was 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 logistical preparation for the 72d Tank Battalion's actions was supervised by Lieutenant Colonel Arthur Cornelson, 2d Infantry Division G4. This preparation began around 1 October. Special equipment would allow tanks to move over obtacles or wet areas. This equipment was obtained and issued to the 72d Tank Battalion.[13]

Halftrack-mounted quad-.50s, 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.

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 logistical preparation allowed for this requirement of explosives to be met. This expense in explosives was fully justified by the reduction of vehicle and equipment losses.[16]

The projected daily expenditure of artillery ammunition for the division totaled 20,000 rounds. This 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 logistical portion of the operation 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 three 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 Pol-mal. 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, 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 continued 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 (see Map 1). 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, 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 gas, maintenance, and ammunition was to be taken forward to them.[29] This was accomplished thanks to the extensive logistical planning and stockpiling before the operation.

The success of the 72d Tank Battalion in making its eight-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 one kilometer north of the village and placed fire on the reverse slope of Hill 841 (slightly NW of Hill 605 on Map 1). 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 three 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 totalled 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 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.

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 logistical 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.

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 the 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 his initiative toward repelling the infantry assaults to his front. This helped in the capture of Heartbreak Ridge.[43] Thorough logistical 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 of 10-12 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 logistical 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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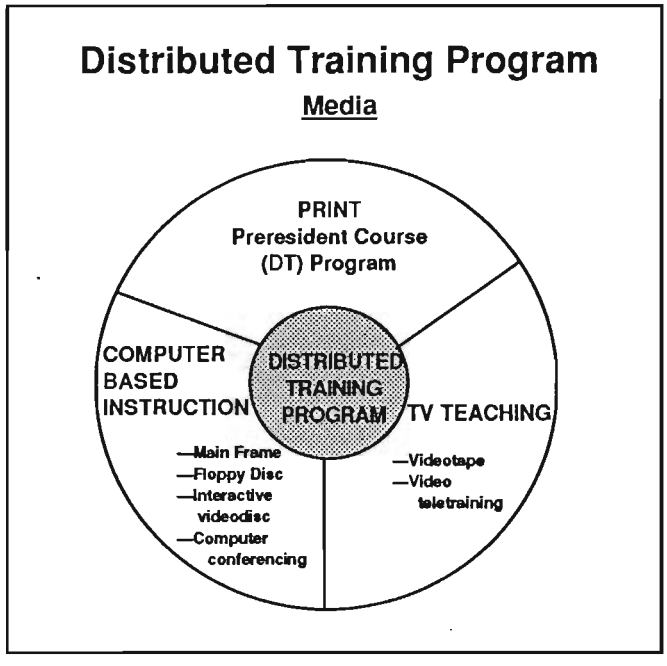
Distributed Training For The Armor School: An Army Test For Training Modernization

by Elizabeth A. Meyers

The U.S. Army's overwhelming victory over Iraq in Operation DESERT STORM demonstrated the superior training our soldiers have received from the TRADOC school system. Maintaining battlefield superiority, however, requires continued research, development, and acquisition of training methodologies and devices incorporating the latest technological advances. The challenge facing the Army with the approach of the twenty-first century is to be ready to deploy and fight well-equipped enemies around the world in conflicts that span the full spectrum of intensities, with little or no warning. To prepare for diverse contingencies, the Army must continue to train to rigorous standards using the full scope of advanced training technologies (for example, computer-based instruction, video tape, video teletraining, simulators and simulations) for individual and collective training.

The versatility of advanced training technologies in a military environment has already been proven during Operation DESERT SHIELD/STORM. The Combined Arms Tactical Training Center (CATTC) at Ft. Knox, Kentucky, prepared reservists, Armor School students, and supported unit training for several tank battalions with simulation training to reinforce tactical skills prior to deployment to the desert. The CATTC facility was also used for the train-up of replacements in theater. Other soldiers received live, interactive Arabic language refresher courses, using video teletraining, at their garrisons from the Defense Language Institute at Ft. Ord, California, before deploying to Saudi Arabia. Reserve officers completed the Unit Movement Officer course at their home stations, using lessons disseminated by video teletraining and video tape from the U.S. Army Transportation School and the Army Training Support Center at Ft. Eustis, Virginia. Reserve units received critical movement information that facilitated deployment to Southwest Asia without sending their transportation officers to the resident course.

The Army's Distributed Training Program (DTP) will apply several advanced training technologies (in addition to printed lessons) to modernize resident training and ensure continued soldier excellence. The program will enable soldiers to pursue pre-resident, self-development, leader development, and sustainment training at their homestation. DTP is now in the proof-of-principle phase. Several proponent school courses were selected as pilots for reconfiguration and distribution. These include 12 Basic Noncommissioned Officer Courses (BNCOCs), four Advanced Noncommissioned Officer Courses (ANCOCs), and eight Officer Advanced Courses (OACs). Initially, pilots will consist of course lessons reconfigured for distribution using printed instructional material. Later, pilots will include advanced training technologies to modernize, improve, and enhance resident instruction and distribute courseware to the field.



Beginning in FY 1994, the U.S. Army Armor School will implement DTP pilot courses for BNCOC, ANCOC, and AOAC. Students scheduled to attend these classes will receive a pre-resident package of instructional materials covering current instruction. The material should be received at least 26 weeks prior to the beginning of the course. Lessons and tests must be completed prior to attendance at the resident course. Distribution of the AOAC course material will not shorten the resident course of instruction. It will remain 20 weeks in length and requires student PCS.

The Distributed Training Program will promote training effectiveness by ensuring that all students enter the resident portion of BNCOC, ANCOC, and AOAC with a common base of knowledge learned during pre-resident instruction. This reduces student frustration and boredom associated with repeating material already mastered by some, yet new to others. Students arriving for the resident course of instruction will have a higher average knowledge level of course material. This will enable them to "hit the ground running" and proceed at a rate of instruction that stimulates, motivates, and challenges all in attendance. Conversely, pre-resident instruction will enable students to proceed at their own rate to ensure maximum learning of prerequisite course material. Distributed Training will also enable soldiers to perform their duties more effectively in their units and enhance unit readiness. Industry studies have demonstrated that using advanced training technologies has significantly increased knowledge retention and job performance.

For more information, contact the U.S. Army Armor School, Distributed Training Office, Directorate of Training and Development, Ft. Knox, Ky. (DSN 464-6753 or commercial (502) 624- 6753).

New Abrams Biography: "A Life So Full"

Thunderbolt. From the Battle of the Bulge to Vietnam and Beyond: General Creighton Abrams and the Army of His Times by Lewis Sorley. Simon and Schuster Inc., New York, New York, 1992. 512 Pages. $25.

This is a superb book about a great American soldier. It must have been difficult to write, for General Creighton W. Abrams Jr. left little by way of files, journals, or other material on which to base a biography. Indeed, he was ever disdainful of what he called "the vertical pronoun" — the self-serving "I." "The record speaks for itself," he would say. Further, it is far too short an accounting of a full-to-brim life, partly a publisher decision, more perhaps reflecting how very difficult it is to do justice to a larger-than-life figure, even in retrospect. *Thunderbolt* is a chronology; it records a life of service. In it are names and events familiar to those who were there, less familiar to those not so close; for the former it will be nostalgic ground, for the latter, perhaps a more tedious read. Full of now-famous "General Abe" legends, it begs other anecdotes, for they are legion and remain to be collected. Robust in accounting early and middle years, it thins near the end, perhaps due to manuscript reductions, more likely reflecting complexities of bringing warp and woof together into a coherent tapestry. Nonetheless, it is a marvelous book; another as comprehensive and exciting may never see print.

About a life so full, it is necessary to understand the unfolding of milestones — *Thunderbolt* does that in a remarkable way. It is also important to understand the legacy subsumed by events. What did we all learn from him; what effect did it have on our lives and service; and so, what was his legacy to us individually, and to our Army collectively? From Bob Sorley's superb narrative, each reviewer may extract his own notes. Here are one reviewer's reflections after reading *Thunderbolt*.

It is often said that our value judgments are formed by the age of eight. Afterward, they are changed only by "significant emotional events" — dramatic circumstances with deep effect on basic values. For soldiers, basic training is such an event. For officers, while pre-commission training may be such an event, more often than not it is the lieutenant's first battalion commander. For the handful of lieutenants who joined the 63rd Tank Battalion, 1st Infantry Division, U.S. Army Europe, in the fall of 1949, the battalion commander, LTC Creighton W. Abrams Jr., was such an event. For he unalterably changed whatever values we may have had; for most of us, those new values would last the rest of our careers. He was an uncompromisingly tough taskmaster. He saw soldiers as the constant — soldiers would do whatever they were trained to do, and do it to whatever level of excellence was demanded by their training. The problem, therefore, lay in leadership — noncommissioned and commissioned; and it was there that his attention focused.

One extremely cold, wet afternoon in the winter of 1950, one of B Company, 63rd's enterprising platoon leaders mired his entire tank platoon in a Baumholder meadow. Company commander Haszard continued with the rest of the company. Executive officer Starry remained to extricate tanks, by now sponson-down in rising water. Three were easy; two taxed the best we could muster. Shortly after daybreak next morning, cold-wet-miserable, we had the tanks back together and back in bivouac. Crews were by the fire with hot soup and a cleanup detail was on the vehicles. Haszard had made extra coffee, first sergeant brought in hot food, and as I tried to get out of by-now steaming wet coveralls by the pot-bellied stove, in came the battalion commander. "What happened?" I reported. "Where are the tanks?" I told him. "My motor officer said you'd never get out of there — how did you do it?" I responded without embellishment. "Break anything?" (He was death on broken cables and snatch blocks — both in short supply). "Nothing sir." "You there the whole time?" "Yes sir." (Not that I could have been anywhere else!) He looked a minute at the drooping and shredded cigar on which I chewed between gulps of hot coffee. Then he pulled a fresh panatella from his field jacket. "You need a new cigar," said he — handed it to me and walked out. Too tired to be relieved, I would learn only later that he told the story of that recovery operation all over the division — how a few good sergeants, and oh-by-the-way their lieutenant, had done what his motor officer assured him could never be done — at least by the crew at work. Clear lesson, that: whatever your job was, you had to know it so well that you could perform it to excellence under the most demanding circumstances. And it ran the gamut — from snatching out hopelessly mired tanks to commanding at whatever level. He did it; he expected it of you. It was a lesson I never forgot.

Consistently, at each level of command, he sorted out what was his and what belonged to others at their respective levels; he never mixed the two. In *Thunderbolt* Bob Sorley recounts General Abrams' directive to his G3 to get the 3rd Armored Division training directive on two pages, replacing about two hundred. Instead of prescribing, hour by hour, what every platoon in the division would do for the next year, there ensued a very brief general instruction. It was followed by a visit to each battalion. There, the battalion commander would describe what he intended to do to achieve the goals set by the division commander. The briefing would end with a recital of how many bullets, gallons, miles, dollars for spares, training area weeks, and other resources would be required. If he was satisfied, he pulled from his pocket a set of 3x5 cards, made some notes and departed. Within a day or two, you would get from the G3 a note confirming your resource allocation for the next year. If dissatisfaction was the result, you could expect several more visits until, as he said, "you figure out what you're doing." It was clear who was running the division, and who was running the battalions. It was a lesson none of us would forget.

Of all the qualities to be admired in the great, two stand above all others. First is empathy — the ability to look at things from the other fellow's point of view. The other is humility — the courage to be humble in the face of fame.

The night of the Kennedy assassination, General Abrams commanded V Corps, U.S. Army, Europe; much further down the chain, I commanded the 32d Tank Battalion, 3rd Armored Division — the famous Bandits of Friedberg. Word that the President was dead came on Armed Forces Radio in early evening; we were winding down to a weekend. Now this. I went to the battalion, called the brigade commander for instructions. We waited. Sergeant Major Frank Zlobec stepped in: "Sir, we've got a battle-roster crew on every fighting vehicle — they've just come in on their own, and they're still coming." So, I joined my tank crew; we went to silent radio watch. After

several conversations with various duty officers, and finally the brigade commander, the jury-rigged telephone on my tank jingled. "Starry here." "Abrams here," from the other end. "What's going on?" I told him what had happened, that we were loaded and ready to move, and that we had just called up the line for instructions. "Units on the border report no unusual activity; the border radio watch stations report normal; Berlin reports normal. You can stand down..." long pause... "Before you go, gather 'em all around and say how much it means — to all of us, that they came in like that. I won't forget it." And neither have I. Empathy.

Author Sorley recounts General Abe's frustrated football career, especially as a cadet. For years, he liked to tell stories about that bench warming; later, he would add other similarly cast stories. He had a pungent sense of humor, enjoyed a good joke, but while those stories always brought a laugh, they had a deeper purpose. For they were stories about his own shortfalls. After a time, I came to believe he told them to remind himself to be humble. And "among the mighty humility demands the ultimate in courage." It was a self-humbling; he did it deliberately, and it represented but one measure of the man's invincible courage.

When all is done, he was the most heroic, yet tragic military figure of our time. Had he commanded earlier in Vietnam, the war would have been fought quite differently, and in all likelihood to a much different conclusion. For of all those who served there and effected strategy and operations, he had a far more carefully developed sensing of the South Vietnamese, and what they might be motivated to do, than anyone else. In addition, he had, characteristically for him, an acutely tuned feeling of the North Vietnamese. They, in turn, respected him, even feared him. "He is everywhere, he is nowhere." They were in awe of him. When time came to redeploy U.S. forces, he insisted that it be done carefully, in full council with the South Vietnamese, and against time lines consistent with their convictions about what they could do. In the end, of course, it was the United States Congress, withholding supplies and funding, that undid all he had worked so hard to put together. As we readied to redeploy U.S. forces, the Army staff in Washington, and its chief, overrode his strong recommendation to redeploy units as units, instead of as individuals. Individual personnel redeployments destroyed unit integrity, increasing turbulence in units remaining. In the end, it caused leaders to go forth to battle daily with men who did not know them and whom they did not know. The result was tragedy; it lead to the spate of largely uninformed, but highly adverse, commentary about Army leadership. Together with the early Lyndon Johnson decision not to mobilize, it foredoomed the Army to ten years or more of bitter rebuilding after the last man was off the Embassy roof in Saigon. Having been Vice Chief of Staff struggling with the buildup, absent a mobilization decision, he knew better than any of us the price to be paid. The night of the final rejection of our proposal to redeploy units instead of individuals, he and I sat long over scotch and cigars. Finally, his eyes watering, he turned to me and said, "I probably won't live to see the end of this; but the rest of your career will be dedicated to straightening out the mess this is going to create." How right he was. Nor could either of us know then that he would be called, as Chief of Staff, to fix what he had tried so hard to prevent from breaking. And in the end, that he would not live to see what he started in rebuilding the Army come to pass. For in the swooping mobile hordes of the U.S. Army in DESERT STORM were embedded all the things he taught us all so very, very well. All the things in which we had come to believe as a matter of faith, for they were his legacy to us as individuals and, through us, they were his legacy to the Army he led over a pretty dismal threshold onto a new "broad sunlit upland."

He was truly "a soldier fit to stand beside Caesar... and give instructions."

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Armor Attacks: The Tank Platoon by John F. Antal, Presidio Press, Novato, Calif., 1991, 333 pages, $14.95.

In *Armor Attacks,* Major John Antal provides a thought-provoking exercise in small-unit leadership and tactics. *Armor Attacks* is an interactive work of fiction. The reader is 2LT Sam Jaeger, in command of an American M1A1 tank platoon in combat in a Middle East scenario. In many respects, it is a 20th Century *Defense of Duffer's Drift* that immediately captures the reader's imagination and interest through a series of scenarios and tactical decisions where one's tactical and technical expertise determines victory or defeat (and death) for 3d Platoon, Alpha Company.

Undoubtedly, the author's extensive experience as a tanker in Germany, Korea, and CONUS contributes significantly to the high quality of the work. A major strength of *Armor Attacks* lies in the realistic situation it creates for the reader. Through his vivid accounts of the numerous combat engagements, Antal allows his reader to sense the emotions of the M1A1 Abrams platoon leader, his crew members, and the rest of the platoon. Although perhaps a bit trite, one can truly almost see, hear, and feel the battlefield in *Armor Attacks.* Written only several months prior to DESERT SHIELD/ DESERT STORM, Antal creates situations which undoubtedly some American units faced in several of the more violent engagements of the war. In short, it provides an accurate assessment of the modern "face of battle."

Moreover, one need not be from a "maneuver heavy" background to enjoy and appreciate *Armor Attacks.* As the author states in the preface, "This book can be challenging and educational, even if you have never seen a tank." Major Antal is absolutely right! This reviewer's tactical background consists of five years in a light infantry division, yet I could hardly put the book down once I opened it. I quickly sensed the complexity and stress facing a young small unit leader in a fluid, fast-paced armor scenario. I was intrigued by the challenge of determining exactly what decisions I would make if I were 2LT Jaeger. Based on my experience, Antal's work should appeal to a wide audience.

If one wishes to find fault with the book, it lies in the quality of the graphics, compared to the high quality of the rest of the book. Today's state of graphic sophistication should allow the author and publisher to produce more polished maps and diagrams, a point definitely worth considering for any future reprints of this fine book.

The bottom line on *Armor Attacks:* a wide audience should read and enjoy it. It is relevant and useful. For example, a company-grade light infantryman making the transition from light to heavy would gain many useful insights into the mechanized tactical world from this superb book. Certainly, younger tankers at AOBC, or those confronting their first field exercise, would find *Armor Attacks* extremely useful. This same applies to anyone in the fire support business charged with supporting a heavy unit. Any young officer can gain some tactical and leadership insights from the study of this book. Any unit preparing for a rotation at the National Training Center should consider it for a lively OPD session. Even the average military enthusiast will find *Armor Attacks* fascinating and challenging. In short, this book is well worth adding to the bookshelves of those who read *ARMOR,* and anyone interested in small unit leadership and tactics.

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The Art of Maneuver: Maneuver-Warfare Theory and AirLand Battle by Robert Leonhard. Presidio Press, Novato, Calif., 1991. 315 pages, $24.95.

Some observers have described the recent Gulf War as a vindication of maneuver warfare, the U.S. Army's AirLand Battle doctrine, and the emerging doctrine AirLand Operations. But is this an accurate perception? Far too many of us have gotten involved in debates over the nature of maneuver warfare without understanding its basic concepts.

Major Robert Leonhard makes an outstanding contribution to our understanding of maneuver warfare in this book. He starts by suggesting that the U.S. Army, in particular, and the West, in general, have a concept of war based on ideas of courage and fairness; we simply do not admire the general who wins by playing "unfairly," no matter how quickly or cheaply those victories are gained.

From that start, he goes on to examine the historical roots of what has come to be known as maneuver warfare, beginning with Sun Tzu and Genghis Khan. In doing so, he highlights several key points: B.H. Liddell Hart's "indirect approach;" the concepts of an ordinary force to fix the enemy and an extraordinary force to reach the enemy's center of gravity; the idea that the center of gravity is not the enemy's strength, but rather his weakness (what Leonhard describes as the King versus the Queen concepts from chess); and finally, he introduces his hierarchy of victory, beginning with preemption, dislocation, disruption, and ending with destruction as the least acceptable form of victory.

Leonhard then shifts gears slightly to examine the operational art and combined arms warfare. His discussion of the operational art focuses on the differing views of the Germans and the Soviets. Here is a brief analysis that explains their commonalities and their differences, the most interesting comment being that the German school seeks flexibility and innovation **during** the campaign, to seize opportunities, and the Soviet school seeks flexibility and innovation **before** the campaign, to create opportunities. His discussion of combined arms warfare plays heavily off of William S. Lind's *Maneuver Warfare Handbook,* though Major Leonhard does make some interesting points of his own by combining Lind's analysis with Richard Simpkin's theory of the physics and psychology of war.

These opening chapters clearly point to the development of a coherent theory in Chapter 4, The Construction of a Theory. Here is the meat of Leonhard's approach to warfare, and a choice piece of meat it is. After reading this chapter, I came away with new understanding of what maneuver warfare means.

Leonhard then goes on to examine AirLand Battle doctrine in light of the theory developed in Chapter 4. How well does the U.S. Army understand maneuver warfare theory, and how well does it implement it in its current doctrine? Although Leonhard compliments the effort made in the development of AirLand Battle doctrine, he is blunt in his opinion that the promise is still unfulfilled. And, although his analysis of future prospects is somewhat dated, as AirLand Operations doctrine continues to evolve, he is on target in his view that, since the theory of maneuver warfare is not thoroughly understood, the danger exists that the institutional inertia of a traditionally attrition-oriented army will not be overcome.

Our leaders, junior and senior alike, should find this book well worth reading and contemplating. Leonhard's style is quick and easy to read, but full of nuance that demands more than a quick read. His conclusions challenge both our concept of what constitutes victory and how to best achieve that victory. His unspoken conclusion seems to be that there is so much cultural bias against maneuver warfare's reality, as opposed to its language, that truly adopting and implementing a maneuver warfare theory and doctrine is impossible. Let's hope that the bias diminishes as more leaders think about the future and how to achieve victory with ever increasingly limited forces.

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Sunzi on the Art of War by M.W. Luke Chan and Chen Bingfu. Fudan University Press, Shanghai, China, 1989, 127 pages.

This "masterpiece on strategies and warfare" has roots dating back more than 2,500 years. International recognition of Sunzi's strategies is recorded in the eighth century in Japan, the eighteenth century in France and the twentieth century in the U.S. Napoleon used these principles to conquer Europe. His violation of some of Sunzi's basic concepts caused his defeat. In the 1904 Japanese-Russian sea battle, Admiral Togo gained victory using Sunzi's principles. President Franklin Roosevelt had a deep interest and understanding of Sunzi's strategical concepts. Major Thomas Phillips, USA, editor of *Roots of Strategy,* 1940, concluded that this work is "...the oldest military work in existence... unquestionably the greatest military classic in any language... little influence in the western world but has guided Chinese and Japanese military thought for 2,400 years. But the authors interpret *The Art of War* as more than strategy management. It also addresses cost management, marketing, philosophy of life, and success through competition.

Westerners often comnplain about the problems of negotiating in China. That the Chinese are so masterful in negotiating and planning is attributed to their knowledge of Sunzi's philosophical teachings. Mao Zedong's work contains verses originating in *The Art of War.* "...knowing ourselves and knowing our opponents will guarantee success every time," (from Sunzi) is so popular that, "every man, woman, and child knows it well."

China is now organizing a systematic approach to Sunzi's work and its business application. Business management doctoral students assigned by the State Education Commission will soon be using *The Art of War* and business applications as a research topic.

The essence of this book is given in six principles. 1. Minimax Principle: Gaining the objective at minimum cost. 2. Motivation Principle: Strategies/tactics employed to have organizational readiness/perseverance equal to the challenges ahead. 3. Time and Efficiency Principle: Maximizing productivity per unit of time. 4. Flexibility Principle: Using contingency plans to meet changing conditions. 5. Information Principle: Acquiring essential data/facts from internal/external sources for plans/operations. 6. Organization Principle: Establishing criteria essential to effective operations, including unity of goals by members and their leader and effective internal communications. Sunzi's list of a good commander's qualifications included intelligence, consistency in rewards/punishment, courage, resolution, strictness of discipline, and kindness to those commanded. The authors believe that these six major principles "...are applicable to all kinds of human activity."

Because of space limitations, the reviewer will offer limited supportive evidence that these ancient principles have in fact been used both in business and war in this century. In 1922, John H. Williams recommended the use of a flexible budget as an effective management tool for the chief executive. Marple in 1946 wrote, "The greatest single advance in industrial accounting during the 1930s was the general adoption of flexible budgeting." Both these citations would seem to support Sunzi's Flexibility Principle.

"Undertaking a military operation means practicing deception." While deception per

se is not identified as a so-called principle, the tactic is built into the battle plan. Thus, in General Eisenhower's assault on Europe in World War II, "...the Allies 'Fortitude' deception plan (was) based on the fictitious threat to the Pas de Calais posed by General Patton and the 'First U.S. Army Group'..." (Hastings, 1984). The USAAF in 2.5 years of bombing (and the RAF Bomber Command in four years) placed two tons of bombs in an area south of Boulogne to each ton of bombs dropped in the Normandy area (Casterman, 1977, 1980). These tactics reinforced the Germans' belief that the invasion would "...strike directly across the Channel at its narrowest point..." (Eisenhower, 1948). In the recent war with Iraq, General Schwarzkopf arrayed land and sea forces in what appeared to be preparation for an attack from the Persian Gulf. This deception greatly enhanced the surprise of the classic end run. His troops wheeled in an encircling movement to the west and north of Hussein's forces, which were defensively positioned to meet an enemy from the east and south.

This modest little book has an abundance of maxims gleaned from Sunzi's works. The reader should find the time invested to be well worthwhile.

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Band of Brothers: E Company, 506th Regiment, 101st Airborne from Normandy to Hitler's Eagle's Nest by Stephen E. Ambrose. Simon and Schuster, New York, 1992.

Stephen E. Ambrose's sixteenth book reflects his eclectic interest in American history and in the American soldier. Easy Company, 2d Battalion, 506th Parachute Infantry Regiment is his subject. *A Band of Brothers* is the biography of an airborne infantry company from its inception in July 1942 through the end of World War II. Ambrose, who has published biographies or biographical works on characters as diverse as Custer and Crazy Horse and Nixon and Eisenhower, delivers a sensitive and useful "life and times" of the disparate soldiers who together were Easy Company.

Easy Company was a special blend of Americans who quite literally came from all walks of life. Harvard graduates, Jews, poor farm boys, they ran the gamut, as did most infantry companies during World War II. But, unlike line infantry, the men of Easy Company benefited from their special status as airborne troops. They all wanted wings and survived a far more difficult weeding out than either their contemporaries in the line infantry divisions or their successors in the present day airborne units. When wounded, they were returned to Easy Company, unlike other infantrymen who went into replacement depots where they were doled out as required, like supplies. Also, unlike their counterparts, they were periodically removed from the line and trained and fitted out for strategic missions, including Market Garden and a planned assault on Berlin. A high level of cohesion resulted, and, as a consequence, a level of effectiveness not often reached in conventional units of the day.

Ambrose allows the men of Easy Company to tell their own story of how they grew up in Georgia, trained in England, jumped into Normandy and Holland, clung tenaciously to a strip of woods outside of Bastogne, and slogged their way ultimately to occupation duty in Austria. That tale is compelling. From their sweating and swearing under the baleful eye of their first company commander to their exuberant and drunken celebration at the end of the war, the reader lives with Easy. The reader is drawn into the rivalry between their first commander and their favorite lieutenant, and rejoices when that young officer first commands Easy and ultimately the battalion. But Ambrose pulls the reader up, reminding us that the terrible Captain Sobel is the man who trained the instrument that Lieutenant, later Major, Winters wielded in combat.

Ambrose's skills as an historian are evident when he mitigates some part of Easy's experiences by placing them in context, either by reminding the reader of the conditions or by calling on others to do so. In particular, he uses Glenn Gray's *The Warriors* and Paul Fussell's *Wartime* to illuminate the sometimes incomprehensible, and even apparently reprehensible, behavior of Easy. Ambrose serves the reader well, for he does not edit the opinion of Easy or obfuscate occasional lapses. Rather, he gently, unobtrusively enables the reader to form judgments based on perspective. This is necessary because, in combat, Easy grouses, complains, periodically shoots prisoners, loots houses, and behaves in other ways which we might not approve or understand.

Easy company played hard, fought hard, and grew into a first-rate rifle company. The old soldiers of 22 or 23 led the company and, in many instances, became officers and leaders at battalion and regiment. They also became a family to which walking wounded would return, rather than risk being assigned to some other company at the end of their convalescence. Devoted to each other, they would, and did, kill for each other. They remain today tightly-knit and maintain a sense of family. Ambrose is right; they are a band of brothers.

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Books Briefly Noted

The Office of the Command Historian, TRADOC, has released a new historical analysis of the founding of the National Training Center sure to be of interest to tankers and cavalrymen. Dr. Anne Chapman' s *Origin and Development of the National Training Center, 1976-1984* explains how the concept grew, early rivalries between TRADOC and Forces Command, how the maneuver area is instrumented, its effect on training, and its impact on the skills of soldiers who "fought" there. Officers and senior NCOs who have experienced the NTC, along with those who have yet to pass through, will appreciate this "big picture" look at the facility many believe is the finest training asset in the Army. Unfortunately, the book is not for sale through the Superintendent of Documents, although copies are being placed at university libraries, state depository libraries, and military post libraries.

As we continue to mark the 50th anniversaries of so many proud WWII armor units, the Turner Publishing Company of Paducah, Ky., is publishing a fine series of large-format unit histories that will be of interest to scholars, veterans of these units, and serving members of those divisions that survive today. Four sample copies that arrived at the *ARMOR* office — *Spearhead in the West: Third Armored Division; 11th U.S. Cavalry: Blackhorse; Tank Destroyer Forces, WWII;* and *The Legacy of Custer's 7th U.S. Cavalry in Korea* all seem of high quality with full use made of the large format to display impressive photographs of the units in action. The graphics accompany excellent accounts of unit actions, often with helpful maps. Appendices list the members in the units with photos, then and now. For availability and prices, contact Turner Publishing at P.0. Box 3101, Paducah, Ky. 42002-3101.

BRADLEY

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This portrait of General Omar Bradley and the M2/M3 Bradley Fighting Vehicle is another in the new series by ARMOR Contributing Artist SPC Jody Harmon. The portraits are in color and will be available through the U.S. Armor Association.

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