ARMOR

Some Thoughts on Taking Care of Your Soldiers

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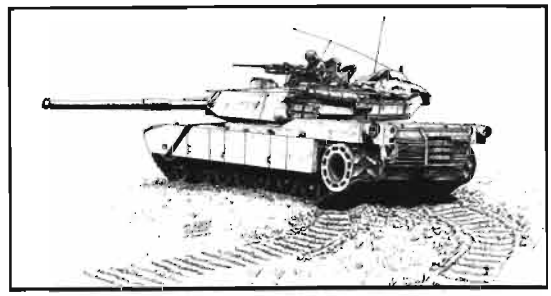
July-August 1987

Tank Tracks



For the 35th time in the century-old history of our journal, the guidon has passed to a new editor. Like any other unit, individuals come and go, but the magazine lives on.

I would be slightly negligent were I not to shatter the stillness of this transition just a little. My predecessor, Maj. G. Patrick Ritter, heads to Europe and leaves behind a solid source of professional thought and a strengthened professional association. We who wear the Armor or Cavalry insignia on our collar owe him our snappiest salute.

A close look at your magazine should reveal a few changes. The paper stock is different; the subtitle, "The Magazine of Mobile Warfare," no longer appears on the cover; and there is a PB number on the contents page. These changes are among those that are a result of the transition to a TRADOC professional bulletin program, which received impetus from the DA effort to reduce the number of publications. But the contents will remain the same – thought-provoking discussions about the armor and armored cavalry business.

This issue contains the final installment of "The Ten Lean Years", MG Robert W. Grow's personal account of the origins of the Armored Force. This four-part series has received much deserved comment and praise.

In "Some Thoughts on Taking Care of Your Soldiers," BG John C. Bahnsen (Ret.) and CPT Robert W. Cone discuss commanders' responsibilities towards their soldiers.

Battlefield teamwork, effectively developed, leads to big payoffs. LTC Alan G. Vitters illustrates today's AirLand Battle Doctrine through WWII blitzkrieg tactics in his "Teamwork and Synchronization – The Blitzkrieg of the '80s."

"Combat Intelligence at IRON STAR" is CPT Michael T. Pierson's discussion of the steps required in Threat evaluation, terrain and weather analysis, and threat integration that are necessary for intelligence preparation of the battlefield and for an aggressive counter-recon plan.

Gunners and TCs can take away valuable training tips on UCOFT, TCPC, range time management, and prep-to-fire and pre-engagement checks from CPT Kris P. Thompson's "The Guts of Tank Gunnery," a follow-up to "Winning the Peacetime Battle" (March-April 1987 ARMOR).

As you read this issue and pick up an understanding of our past – and perhaps some information that you can use in your own unit – please keep in mind that this is your professional bulletin, dependent upon each of you for its content and support. It is written by and for members of the Armored Force and draws its sustenance from our association, to which only about 47 percent of us belong.

This publication is our source for innovative ideas and doctrinal discussion, and our only link to our chosen branch. That fact makes this magazine even more important when we serve in assignments away from troops and tanks. Join up. Pass your copy around, and help keep this association and publication gassed up and rolling.

–PJC

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ARMOR

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FEATURES

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LETTERS

Thoughts on Heavy vs. Light

Dear Sir:

The debate continues on the heavy or light armor approach to tank design. The light armor advocates say the lower weight allows greater mobility to avoid hits, and the heavy armor advocates say thicker armor will prevent attacking ammo from getting through. Both sides fail to understand how technology functions on the battlefield. Both are right and wrong. Weight is not the controlling factor in mobility; horsepower is. With enough horsepower, any vehicle – no matter how heavy – can be maneuverable. A 21-ton, lightly armored tank, with its frontal armor increased to stop the largest current Soviet kinetic energy and shaped-charge rounds, would only lose 5 to 6 horsepower per ton due to the additional weight. How much of a mobility advantage would the lighter armored tank have? Once hit, and hits will occur, the thickness of the armor will dramatically affect CREW survivability. The more energy a round must expend getting through the armor, the higher chance the crew has of staying alive. Shaped charges are affected much more than kinetic energy rounds.

A defender can wait or maneuver for a flank shot on a heavy tank. This apparently makes heavy front armor useless, but its elimination means the defender does not need to flank shoot. A lightly armored tank would be shot at more often and earlier in an attack than a heavy one. A heavy tank unit would be able to deliver more firepower than a light tank unit. It would be interesting to see if this could be documented. Maneuverability is only usable when on the attack, and even then not always. Defending tanks can remain hidden until they fire and are positioned so the heaviest armor is presented to the attacker.

There are several problems facing light tank survival. They would be blown apart by a large shaped charge that would leave only a small hole in heavy armor. A simple high explosive round, useless against heavy armor, has an even more devastating effect than the same size shaped charge. Reactive armor is of no help against such large ammo attacks. It is questionable how useful internal compartmentalization with blast relief ports would be. Interior walls would be thicker than the armor. Large shaped charges and high-explosive rounds will overpower any automatic fire-suppression system because of the tremendous behind-armor effects. A hit by one of these large rounds would cause so much damage that the

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light armored vehicle could not be repaired, but the heavy armored vehicles could be recovered and returned to action.

Since hull defilade is not always possible (the only protection against heavy direct-fire rounds for stationary lightly armored tanks), a hit will be fatal to the vehicle and CREW more often. Infantry are better able to defend against light armor since more smaller weapons can be carried. A single ALPIS weighs 9 kg, which is equal to 16 shaped-charge rifle grenades. Reactive armor would reduce their effect, but not stop the penetration. If facing a force of light tanks, the best weapon to have is the automatic gun. The only defense against it would be to increase the armor thickness, which starts the antiarmor-versus-armor race again. The Israeli Army, based on its experience, has opted for the heavy armor approach to tank design. The events of 1982 proved the value of this.

The NTC is the only other source of information available, but the antiarmor-versus-armor issue IS NOT addressed, except in general terms. The light tank does have a place in the U.S. Army (82nd, 101st, 7th, and 29th divisions), but not as our principal combat vehicle. The heavy armor is not there so a tank can stay put and slug it out, but to save the crew (and the tank, if possible) from being killed when a hit occurs. A hit should always be avoided and the heavy tank has the same chance of avoiding a hit as a light tank. At this time, I see the future tank main armament choice down to two candidates, liquid propellant guns and high-velocity rockets. Missiles are out of the question, since all guidance systems could be jammed (hit chances can be as low as 1 per cent) and the passive systems can be blinded, not to mention that the gunner has to track the target until impact. The automatic loader presents a problem. What good is it that it can out-load a human being in the long term if all engagements will be decided in 10 to 20 seconds? Our tactics revolve around firing 2 to 6 rounds as fast and accurately as possible. With the speed at which a Soviet formation can move, this is critical. The human can load in three to four seconds and the machine needs six to eight. The rocket would be my choice of armament because the launcher would have no overhang (Hurray!) and the automatic loader would be useful because several rockets can be made ready to fire at the same time from a launcher. Secondary armament needs considerable movement independent of the main armament so high speed aircraft can be engaged. An automatic gun for use against light armor and aircraft, and an automatic mortar (40-mm Mk 19) for direct and indirect suppression, would make up the secondary battery. I am not sure a rifle-caliber machine gun is still necessary, but it can be added to the secondary battery.

A more important item than armament is the future fire control system. The display is obsolete before going into use and the eyepiece should remain the secondary fire control system. The helmet-mounted sight (HMS) will be the primary sight for the TC and gunner. By the flick of a switch, the HMS can display engagement, navigation, overlay, operations order, or vehicle status (fuel, temperatures, pressures, ammo, etc). The HMS engagement display would have an aiming reticle, cursor indicating weapon location in relation to the hull, and weapon/ammo ready to fire. The sight itself consists of a body with two heads (one above the other). The upper head is slaved to the TC's HMS and the bottom one is used for engagements and is fixed. The TC and gunner can switch which is being viewed through. The sight would have 3-, 10-, and 40-X magnification. The TC would search with his unaided eye and the HMS-aided eye. When a target is detected, the TC presses an alignment switch, causing the weapons to slew and the gunner's HMS to switch to the TC's display. The gunner or TC lases on the target (three stadia lines appear to match the range received so the lasing accuracy can be checked) and selects the ammo/weapon. When the weapon aligns, the location cursor blinks when the upper and lower periscope heads have aligned, the gunner switches his HMS to the lower head's display, and fires.

With low-level air defense systems so small in number now, and not likely to grow in the future, the tank's fire control must be able to engage low performance aircraft as well as it can ground targets. The Wehrmacht learned this by the end of WWII and all planned armored vehicles had ADA capability built in.

CHRISTOPHER H. SCHNEIDER
SSG, A Troop, 1/238 CAV, IANG
Noblesville, IN.

Reacting to Ambush

Dear Sir:

I am writing in response to the article, "Ambush!" by Captain DeMario. There are two points I wish to address: The difference between a trap and ambush, and actions in ambush. We must understand the difference between the trap and the ambush if we are to react properly. The trap leaves the defender with little defense or maneuver. The ambush is something you can fight through and maneuver out of. The trap can be avoided by the use of reconnaissance and OCOKA. The ambush can occur despite good recon and is almost always laid for vehicles traveling in column. Therefore, avoid the trap and prepare for the ambush. Action drills provide the foundation for effective automatic reaction to ambush. At the call, "Ambush, action right!" the reaction must be to move quickly and shoot simultaneously. When an ambush hits, it can be from one side, the front, the rear, or a combination — usually both sides. Its victim must choose a response with little time for the selection. A platoon can use the herringbone maneuver in response to an ambush on both sides of the column by ground troops with antitank weapons. The 11th Armored Cavalry employed the herringbone effectively in South Vietnam. This, however, is a splitting of forces and can make reconsolidation for counterattack more difficult. Our company SOP states that a company/team caught in a combination ambush will herringbone by platoons (1Plt right, 2Plt left, 3Plt right...), cut through the enemy and consolidate in the direction of travel for counterattack. Action right, left, or rear, with smoke, puts the platoon firepower forward in one sector and gives some nd gives some cover to the rear. The decision as to which direction to move must be made instantaneously. That direction should be toward the enemy. The only defense here is to attack. The priority is to leave the kill zone quickly by punching a hole in the "wall." Turn in the direction of initial fire, maximizing your frontal armor. Do not take time to lay center of mass; the column must explode upon the enemy violently. I anticipate three problems with the action drill response. One, the first vehicle turning will be flanked to any enemy to his front. Two, some vehicles may not have on-board smoke. Three, after turning toward the enemy, on-board smoke could help outline vehicles even better for enemy gunners.

Being flanked to the front is a chance you must take. After you turn and shoot, look over your shoulder or have your gunner scan quickly to that side. Smoke may not be working on all tanks. Use what you have. Ambush reaction remains the same with or without smoke. Finally, in any ambush or attack, tanks never turn their tail to the enemy. If smoke protects your rear or flank for a moment, use it. In the ambush, the enemy already has you in his sights. Smoke will not increase your peril considerably.

What is important is that you have a coherent response to an ambush that the whole platoon or company understands perfectly. Thus, when the platoon leader's turret gets separated from the hull, the remaining tanks will turn, fight automatically — not freeze in their tracks, waiting to die in a similar manner.

JOEL C. GRAVES
LT, Armor
Fort Hood, TX

Handling the Hind

Dear Sir:

The article, "The Mi-24 HIND: A Potent Adversary," in the March-April 1987 issue, was quite interesting. The author has obviously thought a great deal about the subject. I would like to offer a few suggestions that may be of use in countering attack helicopter operations...

The attack helicopters, such as the HIND, fly fast for helicopters, but slow as compared to fixed-wing aircraft of even the early WW II period. Even so, the use of tracer fire to "aim" the Browning caliber .50 M2HB against air targets is wasteful of time and ammo. Considering the short effective range of the gun, this can be a serious problem. Use of the "ring and bead" or "speed ring" AA sight could allow the gunner to better estimate proper lead on enemy helicopters. Hits on the targets would be increased greatly once the gunners get some experience with this sight. There are existing designs that easily attach to the caliber .50 M2HB machine gun.

Another way of increasing the chances of a hit on hostile helicopters would be to increase the rate of fire. The 45-inch-barrelled machine gun fires about 450-550 rounds per minute. The aircraft 36-inch barrel version, the AN-M2, fires 750-850 RPM. The 36-inch barrel is available from Army and Navy sources and is easily attached to the standard M2HB gun receiver. The limited capacity of the ammo on the caliber .50 MG mount limits AA fire to fleeting shots, then furious reloading while hostile aircraft flit about. The current mounts hold a single box, M2A1, of 100 rounds capacity. If the ammo box were to be the same type as used to hold 60-mm mortar ammo (similar to the M2A1 box, but 13 inch, rather than 7.5 inches), it could carry about 200 rounds of caliber .50 ammo. The ammo box tray could be easily modified to hold either the mortar or the MG ammo box. Being located at the mount's center of gravity, the extra weight should not slow down AA aiming.

An aid to disrupting the aim of enemy gunners in hostile helicopters is the smoke grenade launcher on the tank turret. Using all the grenades at once would blind the tank commander as well as the helicopter. If one were to mount a smoke grenade launcher on the top of the main gun mantlet or on the MG mounting so that it could be fired in a desired direction, it would be possible to selectively obscure the surrounding area while retaining enough visibility to begin evasive maneuvering. The article mentioned use of the main gun as a limited AA weapon. What sort of projectile is intended for this use? The great range of the 105-mm tank gun, for example, makes it quite dangerous to friendly forces if it misses the helicopter.

Getting a direct hit on a small target such as a helicopter is extremely difficult. The tank's fire control system is hardly suited for AA fire. Use of the HE shell is probably the best for helicopter attack. Try the Army or Navy AA proximity fuzes already in stock. Put in a self-destruct feature so that misses don't end up killing your own or allied troops miles down the road. One could also adapt the Navy mount captain's "ring and bead" sight for the tank commander to quickly aim his tank's main gun. Navy 5-inch gun mounts, in the old days, used such sights on the roof hatches of the mount shields to point the guns against close or fleeting targets. Even though this old type Navy gun mount is no longer in widespread service, there are no doubt many of the sights in storage.

The ideas suggested in this letter are intended to be short-term improvements using available material in a slightly different way. Longer-term projects may include increasing the elevation of the main gun on some tanks, such as the upgraded M48A5 and the M60, for better AA fire as well as for longer range artillery support fires.

The AA fire mission by tanks should be handled in an "overwatch" format. Not every vehicle needs to be so equipped, though any specially-modified vehicles will have to be distributed down to platoon level for best effect. A comment about AA protection is in order. Unlike Navy ships, which have weapons and sensors for a variety of purposes in one small area, the Army has its capabilities well distributed among many formations. This allows the individual unit to suffer from neglect, as with having almost no organic AA capability. The attack helicopters that attack you may be out of range of your own organic weapons, but may be in the range of the weapons of another unit. Similarly, the helicopters attacking another unit may be in the range of your own organic weapons. Help each other by using what weapons you have in the "AA overwatch" concept as you use the "overwatch" concept in other areas. It is hoped that the ideas presented in this letter prove to be of use. If not, they may provoke better ideas from the readers of ARMOR.

I will leave you with one, last, wild idea: use the 40-mm AA round with proximity fuze (yes, they are that small now) as the "payload" in a discarding sabot AA round. Fitted with a reduced powder charge, so as to keep the velocity "reasonable" for the fuze and the round (5,000 fps is too much), this AA round might be kept down to a cartridge case size that would be as easy to load as a fixed round.

GORDON J. DOUGLAS, JR.
Fullerton, CA

More Thoughts on Light Armor

Dear Sir:

I congratulate CPT Spurgeon and Mr. Crist on producing a very interesting and provocative article. They make a very compelling argument for a light armor force from a deployability issue, though the Combined Arms Tank, as they present it, would have technical limitations that would make it unacceptable at present from a light force standpoint. However, even with their proposal of a very unconventional idea, the authors have raised an issue that Armor as a branch has done little about in recent years, that of the viability and need for a light armor force in today's Army.

There can be no doubt of the combat power represented by the M1/M2 combined arms team, and the need for these forces in Europe, where the Abrams and Bradley battalions represent a credible deterrent to an ever-increasing Soviet menace. The drawbacks to these units are that they are both expensive and not strategically deployable on any sort of timely basis. Light armor, developed to fight on the low-to-mid-intensity battlefield, can overcome these drawbacks with little loss in combat power. In fact, such a force exists in a small way in the M551A1 Sheridan-equipped 3d Battalion (Airborne) 73d Armor at Fort Bragg.

Light armor battalions can be deployed to hot spots around the globe in a matter of days, rather than the weeks required of heavier forces. If the vehicle can utilize the LAPES (low-altitude parachute extraction system) or airdrop methods of insertion, these battalions gain the forced-entry capability that M1 battalions were not designed to have. That the vehicle be able to kill MBTs of all types outside of their effective range is a must for a light tank. The present M551A1, firing the Shillelagh missile in addition to conventional HEAT ammunition, currently fulfills these requirements, but is beginning to reach the end of its useful service life. With the death of the AGS program and the reluctance to product-improve the Sheridan in order to extend its service life, the death

of the only light armor force in the Army is imminent.

To expand on the authors' comments regarding Operation URGENT FURY, the Sheridans of the 3-73d Armor were available to be deployed to Grenada, but were given the mission of guarding the division headquarters at Ft. Bragg. The Marines, in keeping with their commitment to the Combined Arms concept, landed M60s to support their effort in the operation, and as a consequence, they enjoyed much greater success in securing their objectives quickly. Their operations in Grenada show just what a light infantry force is capable of when given armor support.

MG Carl W. Stiner, currently the commander of the 82d Airborne Division, has made great strides in institutionalizing the combined arms concept in the light force, as represented by the airborne division. However, Armor branch also has a role in supporting the light force. Sadly, this role is not currently being filled, due seemingly to a widely held concept in the Armor force that a tank must be a 60-ton tracked vehicle, heavily armed and armored in order to do anything worthwhile on the battlefield. This is simply not true, as witnessed by the ability of just two BTR-60 vehicles to threaten the Rangers on Point Salinas airfield. Light infantry must fight very smart indeed to defeat a mechanized force without armor support. It is up to us in the Armor branch to give the light force that support. Even one battalion of light tanks per light infantry division would give the light force a much more credible battlefield capibility, at the monetary cost of two or three Abrams battalions for an NDI procurement program.

The authors' concept of infantry actually riding in the tank is an excellent one in theory, though from a "technical standpoint impractical at present. An armored vehicle in the 15- to 30-ton range simply cannot be made impervious to either CE or KE ammunition. A vehicle in this weight category must therefore rely on a low probability of hit for its survival. This is generally accomplished by making the vehicle as small as possible in order to reduce the target presented to enemy gunners.

Carrying additional infantrymen would of necessity increase the size of the target, raising the probability of a hit. Deployability would also be reduced, due to the greater cubic volume taken up by the larger vehicle when loaded on Air Force aircraft. At the same time, the probability of kill would be increased, since the envelope requiring armor protection would be increased, while not allowing for additional armor to be added in order to stay within the 15- to 30-ton weight class.

If additional armor were added to the vehicle in order to increase its protection level, deployability would again be reduced, this time due to the increased weight of a larger armored envelope having the same protection level as the smaller, non-infantry-carrying vehicle.

An expedient method to increase the mobility and tactical cooperation of light infantry with armored forces is in use in the 82d Airborne Division, and it is not a new one. The infantry simply rides on the back of the Sheridans. This technique has been used at various times both during and since World War II, and while the infantry does not enjoy the same protection level as the tank crew, it is no less than the protection they have while advancing alone. Infantry leaders ride with armor leaders, so face-to-face communication is possible, and the infantry leader can communicate with his subordinates on other tanks through the Sheridan's external telephone. It is also not a problem to have the infantry dismount when they are supposed to, since they must do so in order to avoid needless casualties. At the same time, the armor leader must have the infantry dismount in order to use his tank's firepower and mobility to the fullest. While primitive, this technique is simple and still effective for both arms.

If it seems that I have neglected the Field Artillery's role in the light force, I have not. I have assumed that the King of Battle is there, as always, doing its part to put steel on target. However, artillery cannot make up for lack of armor support to light infantry, since it cannot advance under fire with the infantry, as armor is designed to.

With the potential for future development in armor protection, CPT Spurgeon and Mr. Crist's Combined Arms Tank may very well be the wave of the future. It is, however, a very unconventional, and quite possibly impractical, idea in light of current technology. I believe the greatest value of their article lies in the argument for a light armor force to fill a role that M60s and M1s simply cannot, that of deploying anywhere in the world in 48 to 72 hours, and to fight and win as a combined arms team upon arrival. The 3d Battalion (Airborne) 73d Armor, along with the 82d Airborne Division, is currently the only force in the world with this capability, and unless something is done now, it will be the last.

DANIEL B. MILLER,
1LT, Armor
Fort Bragg, NC

Historical Footnotes On the 112th Cav

Dear Sir:

I was particularly gratified to see the March-April 1987 issue of ARMOR and the all-too-brief historical sketch of the 112th Armor (Cavalry) on the rear cover.

It is unfortunate that the historical sketch is limited to basic genealogy and does not provide enough details to fully inform the reader about the history of a unit. In the case of the 112th (1st Texas Cavalry), it might have been of interest to note that just before the regiment went into combat at Cape Merkus ("Arawe") New Britain, along the Driniumor River near Aitape, New Guinea, and in the liberation of the Philippines, it was the last U.S. horse cavalry regiment to be deployed to a combat zone as a TO/E mounted unit. The regiment was finally dismounted in May, 1943, on the island of New Caledonia.

Your predecessor, the old Cavalry Journal, carried an article written by MG (then COL) J.W. Cunningham during that period, which described the care and condition of the regiment's horses on that island.

An interesting coincidence occurred when the same issue that carried the historical lineage of the 112th also included the article by MG Grow, entitled "The Ten Lean Years." I noted particularly the account of the move of the 1st Cavalry from Marfa, Texas to Ft Knox in January, 1933, as part of its conversion to a mechanized outfit. Members of the 112th greeted the 1st when it came through Dallas, Texas at that time (a copy of an article from a Dallas newspaper on that incident is enclosed).

The article suggests that the conversion from horses to vehicles was not universally a happy one. Incidentally, this event occurred just about the time that the Army abolished the use of the M1913 "Patton" saber in the Cavalry. It was a time of great change to be sure and the history of the 112th reflects this.

DAVID 0. HALE
Woodbridge, VA

COMMANDER'S NOTEBOOK

MG Thomas H. Tait
Commanding General
U.S. Army Armor Center

Remembering Some Lessons Learned

In the latter part of April, the Armor School hosted a two-day seminar with six retired Warrior Generals. They interacted with our AOAC small groups and participated in a panel session with the school staff and faculty and Pre-Command Course students.

The senior general present was James H. Polk, class of 1933, USMA. Commissioned in Cavalry, he rose to command the 3d Cavalry, Patton's eyes and ears, in World War II; the 4th Armored Division; Berlin Brigade; V Corps; and culminated his brilliant career in 1970 as CINCUSAREUR. We had the rare opportunity to listen to a soldier who was initially trained on the horse and eventually commanded an Army Group with four corps (American and German).

General Polk's thoughts on training were gathered by Major Daniel R. Murdock, who was his escort during this visit to the Armor School. The comments in parentheses are mine. – THT.

Training – In the early years, the troops would mount up at 0730 and move out on a tactical exercise. They would return about 1130, clean and stable the animals, then break until afternoon. In the afternoon, the NCOs would take the soldiers on detail and the squadron commanders would train the junior officers in technical skills. The officers made it a point to try and do things better than the best NCO.

The officers stuck to the basics much of the time. During tactical or weapons training, the platoon sergeant kept an eye on the lieutenants to make sure they were on the right track; however, the training of junior officers was the senior officers' responsibility.

In World War II combat, units were normally given an easy or less-critical mission until they were "bloodied" once or twice. The units were then pulled out to get things together before they were put into a more critical and dangerous situation. Individual soldiers were normally assigned where they were needed most. The experienced crew members trained the new guys.

"We stopped taking 2LTs trained at the Armor School – they had only Armor training, nothing on reconnaissance. We would put the platoon sergeant in charge for 90 days to see how he would work out, and promote him to 2LT." *(The Army today needs a mechanism to allow battlefield commissions. We didn't commission our best NCO leadership in Vietnam – this was a mistake.)*

"We always tried to develop a winning attitude, whether it was tug-of-war, polo or tactical training."

General Polk's thoughts concerning gunnery training were very clear. All crews should be trained to use their weapons in a precision engagement. However, reconnaissance elements, during actions or contact, must be trained to place a high volume of suppressive area fire into the target area as quickly as possible.

"When one scout crew was engaged, every weapon within range let loose as much ammunition as possible. You don't need a separate table to teach mass supressive fire." *(We are examining separate cavalry gunnery tables for the M3. There is some controversy regarding this initiative; however, scouts do not fight the same way as infantry. Therefore, our tactical tables need to be different.)*

Combat Operations: General Polk commented on the fundamentals of reconnaissance operations, as conducted by the 3d Cavalry in World War II, and how they tracked with

current doctrine.

1. Reconnaissance zones were characterized by:
   - Start point
   - Termination point
   - Lateral boundaries
   - Mandatory contact points
   - Check points

2. Maximum reconnaissance forward was applied only as the situation dictated. Often, scouts were employed in depth; jeeps followed by scout cars, and finally tanks or tank destroyers.

3. The troops always oriented on the objective during reconnaissance and on the main body during security missions.

Actions on contact taught at the Armor School today are similar to those applied in WWII.

- Deploy, suppress *(with everything you have)*, and report. Make *maximum* use of artillery. *(Today we'd also make maximum use of CAS and attack helicopters if available.*

- Develop the situation.

- Choose and recommend a course of action. The courses of action were normally hasty attack and then bypass if the objective could not be taken in an hour or less. "We rarely chose a hasty defense."

The tanks followed the scouts and reacted immediately to any engagement involving the scouts. "The scouts were much more willing to get close when they knew the tankers would get there quickly." *(Another argument for keeping tanks in the divisional cavalry squadron.)* The bond that developed between tanker and scout due to close association should not be discounted. You cannot take any tank company – attach, OPCON, DS, or whatever – to a cavalry squadron and expect it to perform the way the squadron's organic tankers would. We all recognize a need to fight for reconnaissance – and a division cavalry squadron should be able to do it without direct fire attachments.

Command and control was mission-oriented. GEN Polk usually had his S-3 write a five-paragraph field order to issue to squadrons only when the overall mission changed. Squadron commanders, in most cases, issued oral operations orders off of the map overlay. Commanders issued orders, not S3s.

- The commander's intent was always there; they just didn't invent a name for it in those days. *(In the order it was known – and still is today – as the concept of the operation.)* One excellent example was a tasking given to Colonel Polk by General Patton on the 3d Cavalry command net. General Patton stated "I flew over the Danube today. There is a bridge intact. Take it and I'll make you a brigadier; if you don't, you're relieved." General Polk remembers he had no trouble remembering the commanders intent. He also said "Even though the bridge blew up in my face, I didn't get relieved. That was just (GEN) Patton's way of motivating people."

- Reports to corps were simplified when General Polk attached an AM commo team to corps to establish a dedicated reconnaissance net. The 3d Cavalry was able to stay off the cluttered command and intelligence nets.

- Reports sent to higher headquarters were sent by the S2. The S3 looked forward, the S2 looked back. *(Good advice.)*

- Everyday, General Polk tried to anticipate where the most critical action would occur. He then went to that location and sent the executive officer (XO) to the second most critical area. The XO kept up with the battle in detail!

- FRAGOs were issued face-to-face when possible, then, if necessary, on the radio. *(As we move into high tech command and control systems, there appears to be a tendency to look at a screen instead of a face when we issue FRAGOs. If we are concerned about subordinates understanding commander's intent, then we really need to look them in the eye when issuing the order.)*

Leadership: General Polk sat on a board after World War II that selected officers for integration into the Regular Army. When applicants were asked which trait they admired in their leaders, the almost universal answer was "fairness."

Force Design: The Bradley is too large to perform reconnaissance. *(This is especially true if the philosophy of not fighting for intelligence is to be the norm. The Bradley, in this role, is too large and too noisy – nothing stealthy about it. However, if we are to fight for intelligence, we will need to add tanks to the division cavalry squadron.)*

General Polk stated that divisional cavalry must have tanks. "You can't expect your scouts to do their job unless they know there is a dedicated backup." *(See above. This also argues against providing just any tank company in support of the divisional cavalry squadron. The operative word here is dedicated.)*

General Polk's wisdom should not be lost on us. He is one of the few remaining World War II leaders who fought in high-intensity combat. We need to remember the lessons they learned, and not reinvent the wheel with soldiers' blood. Think about it.

Treat 'em Rough!

DRIVER'S SEAT

CSM John M. Stephens
Command Sergeant Major
U.S. Army Armor Center

Leadership Development

More and more emphasis is being placed on leadership development. Positive directions have been developed as we grow with the program. There are key points that have been expressed by our leaders over the last couple of months. I would like to share with you some of those points.

In order to reinforce leader development, all of us must know what leadership instruction is being taught and what are the objectives of that instruction. What better place to find out than the Noncommissioned Officer Academy?

The NCO Academy is an outstanding place for an NCODP class, where the noncommissioned officers of the organization can see first-hand where our noncommissioned officers live while in school, what is expected of them, what subjects are taught, and how to reinforce the training received once they return to the unit – the latter being the most difficult. Most of us, over the years, have not allowed the newly trained NCOs to use their newly acquired talents when they arrive back in the unit.

There are many subjects which need to be taught in the platoon that can be assigned to other NCOs in the platoon to develop their skills. Physical Training, Drill and Ceremonies, Inspection in Ranks and the Billets, How to Wear the Uniform, etc., are a few of the subjects for a new Primary Leadership Development Course graduate.

It is important that the platoon sergeant always remember that he is responsible to counsel the NCO on strong points and shortcomings. Probably the single most important point to remember is that Leadership Development allows for mistakes to be made. Too often we recklessly criticize someone for a mistake instead of using it as a teaching point and sharing the problem with others.

The second area I would like to address is the Military Occupational Specialty of the NCO. How do you develop the Basic Course graduate? How do you combine leadership with technical skills? How do you integrate technical and tactical training? How do you integrate common tasks and individual task into leader training? First, you must know what the demands of the basic course are. Again, for those of you who are stationed on or near a BNCOC, I strongly recommend the command sergeants major, first sergeants, and platoon sergeants visit the school and learn what courses of instruction are taught, and how to assist your NCOs during schooling and upon their return to the organization. It's not easy to combine leadership with technical skills, especially with the deletion of monetary resources. However, it is a must if we expect the squad leader or vehicle commander to be totally proficient on the system for which he is responsible.

First, you have to integrate technical and tactical training. All the technical skills in the world will not help you if cannot maneuver the vehicle at the precise moment. The Unit Conduct of Fire Trainer (UCOFT) demands the basic fire and movement exercises. The National Training Center, and (soon) the Combat Maneuver Training Center in Hohenfels, demands technical and tactical proficiency if you are to survive. The Basic Noncommissioned Officers Course (Armor and Cavalry) demands technical and tactical proficiency through Situational Training Exercises (STX).

Continued on Page 46

RECOGNITION QUIZ

This Recognition Quiz is designed to enable the reader to test his ability to identify armored vehicles, aircraft, and other equipment of armed forces throughout the world. *ARMOR* will only be able to sustain this feature through the help of our readers who can provide us with good photographs of vehicles and aircraft. Pictures furnished by our readers will be returned and appropriate credit lines will be used to identify the source of pictures used. Descriptive data concerning the vehicle or aircraft appearing in a picture should also be provided.

Answers on Page 53

Some Thoughts on Taking Care of Your Soldiers

by Brigadier General John C. Bahnsen (Ret.) and Captain Robert W. Cone

Have you ever met a fellow officer who did not claim to "take care of soldiers?" Of course not! "Taking care of soldiers" has become the standard byline of our professional dialogue. But what exactly does "taking care of soldiers" mean?

To many officers, it is synonymous with somehow making the Army system work for the individual soldier, or ensuring that the system meets the soldier's needs. Such a notion is fluffy at best and is probably the reason – despite all the rhetoric – we generally take care of few soldiers very well. Unfortunately, "taking care of soldiers" is a concept that is long on good intentions and short on specifics.

The purpose of this article is to provide some age-old techniques of "taking care of soldiers" that work well in peacetime and will return big dividends in war. The ideas we offer are really little more than old wine in new bottles. There is little pride of authorship here, as few of these techniques are original. Rather, they are simply an accumulation of ideas that work. Tested in both peace and war, they have passed from mentor to mentored over many years

Our profession is one of the very few that encourage the free exchange of such professional "techniques" without acknowledgment. We know that you have ideas that already work; but just maybe you will find something here that will make things better still.

On Health and Physical Well Being

Few organizations possess the resources to care for the total needs of their members. In the main, the U.S. Army does. Despite that fact, one does not have to look very far to find soldiers with rotten teeth and in poor physical shape. The resources to fix these readiness degrading problems are all available, but few soldiers – by themselves – possess the skill, knowledge, or persistence to make the bureaucracy deliver. Making the bureaucracy work for your soldiers' benefit is your job as a leader and as a commander, and that's not easy. Dealing with problems takes time – both your own and that of your soldiers – and often distracts from your immediate concerns of "getting Delta 34 up" or getting ready for the ARTEP or qualification gunnery. Moreover, some of the "little things" you encounter in dealing with the bureaucracy tend to get you in more trouble than may seem of immediate worth to you. For instance, making a bunch of dental appointments for soldiers and then not following through on seeing that the soldiers get to them does tend to generate some embarrassing statistics at higher headquarters. The point, though, is that you need to worry about the big picture. Sure, you can "micromanage" your way through a marginally successful 12-18 months of command by working problems on a day-to-day basis, but the truly big gains come from long-term payoffs from long-term investments, such as taking care of the health of your soldiers.

Dental Care

How many "snaggletooths" do you have in your unit? We bet that if you have not personally checked your soldiers' mouths, you have at least a handful of soldiers with obviously decayed, missing, or twisted teeth. You say: "How can this be? They all have their teeth checked by dentists at every prep-for-overseas-movement exercise, every birthday-month audit, and every routine exam!" While all that is probably true, the pathology of dental disease is a devious one. Those soldiers' teeth didn't get that way overnight, and although they probably don't like their teeth as they are, those soldiers sure don't want to go through the agony and aggravation of getting them fixed. Although they may be identified for dental work at these various screening procedures, they just never seem to make it over to the clinic to get the work done.

It is not just young soldiers who have bad teeth, either. Take a hard look at your first sergeant's and your platoon sergeant's teeth, These individuals can provide the most creative and exotic excuses for

avoiding dental work. Do not hesitate to make them open their mouths and show you their teeth. Keep a little card file, reminding you just who needs what. But most of all, follow up and make sure that, once the dental care is started, it is finished regardless of how inconvenient it is for your unit and how uncomfortable it is for the soldiers.

More than likely, you will not get thanked for making the soldier go to the dentist tomorrow or the next day, but they will appreciate it eventually. That is taking care of soldiers.

Medical Care

The dental care issue may seem like a minor point, but the same principles can be applied to medical care. Very fortunately, our soldiers are pretty durable and rarely get hurt or sick. When they do need treatment, it is just as serious to them as it is to a four-star general. They will be treated just as well as a general, and they need to know that.

Take the time to personally visit your troops in the hospital and make sure their friends and squad or crew members do also. It can be a frightening experience for a young soldier to find himself all alone in the hospital without contact from his family and friends. Let him know that somebody cares and that it matters that he gets good treatment and gets well quickly.

A real secret to good health care is getting to know the people who take care of your troops. As a unit leader, take the time to let your unit's physician assistant, medical platoon leader, or even doctor from the hospital know who you are. Make a personal effort to ensure that they understand your unit's training needs and that your soldiers matter to you personally. Let them know when you think they have done a good job and invite them to your unit's training events.

Building a good rapport not only tends to smooth out rough spots in communication, but provides your soldiers with a more friendly and familiar face when they need it most.

D Co., 1-67 Armor pulls together to win division championship in the 2d AD during 1984 tug-of-war competition. Pick your sports carefully, the authors suggest. "Find a sport best suited to your unit's talents and make it an all-out effort."

Physical Fitness

One key to good health is good, hard physical training. Immediately, this statement means many things to different audiences. Physical fitness has gotten a bum rap in recent years by the predominant image of seemingly bionic young officers grinding many of their senior NCOs and less fit soldiers into the dirt on 10-kilometer runs. This is a shallow perspective that really misses the point of physical training. The ultimate goal is teaching them to take care of their mind, their body, and their spirit – the entire holistic fitness program which we are now undertaking in the Army. Soldiers need to understand the basic concepts of diet, conditioning, strength development, and aerobic fitness.

Physical fitness should be a winning proposition for all and it is the leader's job to make it that way. PT events should be tailored to meet the needs of all soldiers both young and old. Stretching before and after exercise is something you owe your older soldiers. Do not jump in and out of fitness programs, but build toward attainable objectives and then celebrate their attainment. Find a way to give your weaker performers special attention, but avoid embarrassing them publicly. Good tips for this are the "Run for Your Life" award program, release point runs, and small group *fartlecks*. Nothing can give your unit and its soldiers the same emotional lift as winning at competitive athletics. Unfortunately for many units, such endeavors are a double-edged sword. Many units halfheartedly enter team competitions simply to fill a requirement. They end up forfeiting half their games and humiliate themselves in the games that they do play. As a commander, pick your sports carefully. Consult your training schedule to make sure you can finish what you start. Find a sport that is best suited to your unit's talents and make it an all-out effort. A division championship in a weird sport that can be mastered by practice, like "tug-of-war", is far better than losing records in football and basketball. Taking care of soldiers is giving them the winning edge.

Nutrition

Another way of taking care of your soldiers' health is in the dining facility. Did you ever wonder why troops swarm to the "gut truck" or "poagie wagon" each morning when it rolls into the motorpool or onto a range? More than likely, it is because your soldiers didn't get up early enough to get breakfast in the mess hall. The 70-cent breakfast is the best deal going in the Army today, and yet, if you check the headcount, you will find that very few of your soldiers take advantage of it. Where else can you go into a restaurant, cafeteria-style, and have all the toast you want, all the milk

you can drink, cereal, and fruit (two to three different kinds)? And if you *must* eat those things that are not good for you, you can eat eggs, creamed beef on toast, and all the other wonderful things we serve in our mess halls. The 70-cent breakfast is the way to take care of your soldiers, so they do not wait until the "maggot wagon" comes through the motorpool to spend their precious money on a pastry and coffee for a buck-and-a-half. That kind of food does not last long.

Great idea, you say. But just how do you get your soldiers to breakfast? It is not an easy situation to fix, but basically you need to make sure that the troops get up or come in early enough to make it to the mess hall. There will be plenty of resistance from the growing number of young soldiers who live off-post with their families, but they are the ones who can afford the "gut truck" least.

The other thing you can do is make sure the mess hall is serving what the troops want. Glad-hand the mess sergeant, eat breakfast in the mess hall yourself, and set up activities like company breakfasts to introduce non-users to the facility. Your mess sergeant will quickly identify you as the reason that his headcount has gone up and he will very likely be more responsive to your suggestions and requests in the future.

Clothing and Supply

How important does a soldier have to be to get an issue wrist watch? How about goggles, coveralls, a desk in his room, or a new mattress or new pillow for his bed? Making sure your troops get everything the supply system has to offer is another way to show them that you care about them. The Army supply system is both complicated and hazardous for the unit commander. It is complicated because it takes constant study and effort to figure both what you are authorized and how to get it. It is hazardous because once you have figured the system out, you are ultimately accountable for all the extras that you bothered to get. Unfortunately, many commanders have reduced their risk by cutting back on troop amenities under the general philosophy of "the less you have, the less you have to worry about." But imagine a conversation between two privates from different units within the same battalion, one with all the little extras and one without, and figure out what kind of conclusions they will draw about which soldier is more important to his respective unit. Taking care of soldiers is going the extra mile to show them you care about them and they they are important to you.

Another way to take care of your troops is to make sure they are wearing the right clothing for the weather. You will not have much

"... Another way to take care of your troops is to make sure they are wearing the right clothing for the weather..."

trouble with the obvious things like field jackets, gloves, or wet weather gear; it is the little things that many soldiers consider to be optional. Such items as long underwear and the OD muffler apparently do not seem like a fashionable idea to inexperienced soldiers. Make them wear them whether they like it or not, and then you need to check them to make sure that they do. A related point involves the tendency of your more senior personnel to have accumulated "special" items of clothing. Such niceties as goose down parkas, insulated coveralls, "Mickey Mouse" boots, and electric socks are great cold fighters that your more experienced NCOs and officers have collected in their careers. Unfortunately, they have no business wearing them unless they have been issued to the entire unit. Leaders need to wear the identical items of clothing that their soldiers do in order to gauge the effects of the elements on their troops.

The quartermaster laundry is another great deal for your troops, but very few take advantage of it unless they are pushed. The reason is that quartermaster laundry is badmouthed by a lot of soldiers because the service is not timely or items get lost. Generally speaking, the problem is not with quartermaster laundry, the problem is with your supply sergeant. The supply sergeant is responsible for pick up and delivery, as well as accountability and paperwork. The fewer soldiers who use it, the easier the job is. The best way to solve that problem and improve your unit's

Members of D Co., 1-67 Armor, gather for Thanksgiving Dinner in November, 1983. Captain Cone, one of the authors, commanded the unit at the time.

service is for you as a commander to sign up for it yourself. For eight dollars a month you can put in 21 pieces of laundry a week and you get your fatigues and shirts back on hangers. Once you and your supply sergeant work out the details of getting the service up to your standards, then you can have the rest of your unit sign up in good conscience.

Get Yourself Organized

A sure-fire way to ensure that nothing every drops through the cracks and that you are ready to meet any contingency is to keep your entire unit waiting around for you all the time. Make them wait while you are in a meeting over at battalion so they can react to any problems that might develop in planning a training event. Keep a real close hold on them during the little free time that you do allow them so that you can call them in at the drop of a hat to get a jump on some unanticipated problem.

Sound ridiculous? Unfortunately, it is an unstated leadership practice for many commanders, and sadly enough – due to the loyalty and dedication to duty of our soldiers – it usually works. Granted, there are many situations in which units must be responsive to rapidly changing and extremely demanding missions; however, it is when such a leadership style becomes the standard in garrison life that serious damage is done. We submit that the real cause of such "leadership by micromanagement" ultimately is created by a commander at some level who is not organized and therefore places an extremely low value on his soldiers' time.

In the planning process, many leaders take their soldiers' time as sort of a given. They think that, although they worry about range time, bullets, diesel, and repair parts, the one quantity that is truly unlimited is their soldiers' time. In a sense, this is true. It is the one resource immediately available to the small unit commander which is limited only by the number of hours in a day. Unfortunately, the abuse of this resource has certain intangible and long-term costs. The fact is that you rarely waste the time of people who are very important to you or that you care about. When you waste a soldier's time, you are telling them that you do not value their time and that you do not care about them. And as a result, they tend to perform in the mediocre fashion that you would expect of someone whose time was valueless. This begins a seemingly endless cycle of allocating more time to accomplish less work. The solution to the problem is simple. Get *yourself* organized and make plans that place a premium on your soldiers' time.

Do Your Homework

You can never think of everything, but most of us can do a lot better than you would think. Work through every operation mentally from start to finish. When you are planning a training event, talk to the NCOs in your unit who ran the event the previous year; talk to your counterparts from sister units who have already been through it; talk to the evaluators and controllers. Gather every bit of data that you can about how it was done and what could make it better.

To learn from your own mistakes means that your soldiers are learning about you at the same time, and that makes you look stupid. Learn from somebody else's mistakes as much as you can beforehand; you will still make mistakes, but they will be far more subtle.

Use as few soldiers as you can in the planning and set up phases. Do not be shy about making your senior NCOs and junior officers put in equally long hours of preparation. Rehearsals, map exercises, TEWTs, and terrain walks are all good ways for you to get your leadership team in synchronization without making troops wait for you. When you are ready to execute – get on with it. Demand 100% effort from your entire unit and accept no less.

Train to Standards – Not to Fill Time

Today's soldiers are smarter than they have ever been. If they are pushed in training, they will accomplish far more than we expected in the past. Set high standards, and when the soldiers meet the standards early, do not jack them around because you did not figure that they would do that well. Either move on to more difficult tasks or let them off; do not make them repeat the same tasks over and over or they will respond by developing a norm of taking four hours to do something they can really do in two. After letting the troops off early a few times, you and your NCOs will smarten up and plan from the start to accomplish far more than you had expected.

Stick to Your Plan

It seems that a lot of commanders have good intentions and pretty much follow the planning process as described up to this point. But then when the first tank goes downrange and "bolos" with the brigade commander watching, or one of the troops you let off early gets caught by the colonel at the snack bar at three o'clock in the afternoon, their knees seem to get a little weak. Many will abort the plan, cut their losses, and micromanage their way to survival by overreacting to every intonation of their boss's voice. Others will stay the course.

The question is, "If they change their approach, who will notice?" First of all, their troops will notice, from the 1SG right down to the last private. The privates will just figure it was too good to last anyway, and the 1SG will chalk that officer down in his memory along with dozens of other commanders he has known who "had the right idea but couldn't make it work." Second, the poor commanders will know.

The point is, even the best of plans are going to have setbacks. Make your plans the right way and stick to them. If you lack the guts to do things the right way in peacetime

with only the threat of losing your "career," how can you expect soldiers to follow your plans in war, under the very real threat of losing their lives? Stick it out; it is usually after the first few glitches that the plan begins to pay off.

Recognizing Your Soldiers

So far, most of the ideas we've mentioned for taking care of soldiers have either involved making people do things that they did not really want to do, or that put you, the commander or leader, at some form of risk. Recognizing your soldiers is the one area that is pure gravy for both you and your troops. There are a lot of different ways that we can recognize our soldiers. First of all, you should get used to simply looking them in the eye, shaking their hand and saying *"Thanks"* and *"I'm proud of you"* when you think they have done a good job or put forth extra effort. That is the easiest way and often is the most effective.

Medals

When your unit successfully returns from a major training event or scores well on a major inspection, you should think about impact awards. Awards can range from battalion certificates of achievement, to the Army Achievement Medal, to the Army Commendation Medal.

Here are some things to remember, however. An impact award is exactly that. You need to give it out almost immediately after the event or you miss the point. Make an issue of recognizing those soldiers who are not highly visible, such as: mechanics, cooks, medics, and truck drivers. If a soldier is only attached to you, make a point of recommending him to his commander for an award and see that he gets it; he will beg to work with you on the next field problem.

Also, do your homework and find out what other awards the soldier has received. Many older NCOs do not have the newest medal, the AAM. It is often surprising to find out that a number of senior NCOs also do not have ARCOMs. You are not finished giving the medal until the soldier has the certificate, the medal, and the orders.

Another "no lose" situation is the Good Conduct Medal. Despite the fact that there is an Army regulation that states that soldiers should receive this award and all others in an appropriate ceremony or in formation, very few actually do. Make an issue of tracking down which soldiers have not received the Good Conduct Medal and give these awards in your formation. Another good tip is to always get a photographer to take pictrues of the award ceremonies. Some public affairs offices gladly provide this service. Having each photograph signed by the officer presenting the award and giving it to the soldier is a nice personal touch. The rewards your unit gets from a good awards program is worth far more than the cost of the ribbon and the piece of metal.

Efficiency Reports

Good leaders need to be able to write well to take care of their NCOs and junior officers. As a commander or rater, if you cannot express exactly how good the people who do your bidding are, then you might as well stick knives in their backs. Too many officers worry too much about their own efficiency reports and not enough about taking care of their "horses." If you cannot write, now is the time to learn. Writing comes easily to very few people and the only way that you get better at is by painful repetition. Worry less about using big words and more about being clear, concise, and to the point. You must be able to take care of the people who take care of you. Good writing is a key to this.

A related point involves the commander's role as a reviewer. You need to teach the NCOs and officers who work for you how to write as well. Too many units accept the norm that the average EER for an E-5 is a 119, the average EER for an E-6 is 122, and anything goes on these reports just as long as they

Major General John W. Woodmansee presents the 2AD's Distinguished Unit Award to D Co., 1-67 Armor in July, 1984..

do not get kicked back by battalion or division. That is wrong! Reviewers need to treat every report as if it were their own. The NCO may not be a future CSM, but every sentence should be complete and every "4" in its proper place.

In most cases it takes six or more painful drafts, but hopefully the writers will learn something. The good news on this subject is that the personal computer revolution has made it a lot easier to crank out high quality paperwork through the use of multiple drafts.

On the Family

A few years ago, this subject would not be discussed in this article. Either young enlisted soldiers did not have families or those who did were well under control of the highly organized distaff side. The Army of Excellence is much different today. The advent of the all-volunteer force raised the number of young soldiers with families while the rise of sexual equality has significantly weakened the responsibility of spouses to act as unpaid articipants in their husbands' careers.

We do not wish to argue the broader implications of this social tendency, but simply to point out that the focus on enlisted family life is more acute than it ever has been. Also, we acknowledge wide variances in both the need for and current state of unit family assistance programs in both USAREUR and CONUS units.

The point is that you simply cannot escape it; if your soldier has problems at home, he brings them to work. You are ultimately as responsible for the welfare of the soldier's family as you are for the soldier. While at the same time, you walk the fine line between intruding into the sovereignty of family life on the one hand, and doing too little, or being uncaring on the other.

Unit Assistance

Effective family programs are voluntary. If you have done a good job of taking care of your soldiers up to this point, you will have a leg up on taking care of the family. It is a good idea to have unit parties to celebrate major accomplishments. But these parties should be targeted at the family. Do not make anybody do anything. More than likely, it will be apparent to you which wives are in the "old guard" and which are "new wave." Let the "old guard" organize as they please and just keep periodic touch with the "new wave." Do not discriminate against wives who refuse to participate in unit functions. If you have a tight unit, their families will follow *de facto*. The key point to remember is that the best thing your unit can do for its families is not to waste your soldiers' time.

Professional Assistance

Despite your best efforts, your families are going to require outside assistance to help with certain problems. The commander's role here is both as a directory of information to military and community agencies and often as an intermediary. It is important to stay in contact with these agencies throughout the period of the problem. Few soldiers like to admit difficulties with their families and therefore, all levels of leadership must be sensitive to indications of trouble. Leaders need to know the conditions of housing in which their families live and the rough financial status of each family. Do not be afraid to seek professional advice with any problem that you do not think you can handle.

Conclusion

Now that we have laid out this long list of techniques and ideas, the question that must be answered is, why should you bother to take care of your soldiers? There are two good answers to that question. First, as we pointed out very early in this article, taking care of soldiers is a long-term investment that pays off. It pays off in peacetime, when your soldiers realize that you really do care about them, when they realize that it is just as important to you that the mission gets accomplished the "right" way as it is that the mission is accomplished at all. The payoff comes in strange ways. Sometimes it happens when your unit does far better on a gunnery or an ARTEP than you felt that they should have, or seeing them do something really well that you had not expected. At other times, it comes from offhand remarks you hear in the battalion area or just the way your soldiers respond to you. Sometimes it is more formal, like being specially asked to reenlist or promote one of your former senior NCOs, or receiving a Christmas card from a soldier who was in your unit several years ago.

Second, and most important, caring about your soldiers in peacetime shows them that you will care about them in combat. If you are willing to set the example for your soldiers by leading from the front and saying, "I care about you, and I'm not going to let you do something I won't do," then you will be successful in combat.

Caring for your soldiers is harder in peacetime than it is in war. If you learn to really care about them in peacetime, then combat will be that much easier and they will follow you anywhere.

CAPTAIN ROBERT W. CONE Armor, graduated from the USMA in 1979. He served as a platoon leader and troop executive officer in the 2-1 Cav and BMO and company commander in the 1-67 Armor of the 2d AD. A graduate of AOAC and IOAC, he is currently completing graduate school at the University of Texas in preparation for duty with the Leadership Department of the USMA.

BRIGADIER GENERAL JOHN C. "DOC" BAHNSEN retired in June 1986 after 30 years of service. He graduated from USMA in 1956 and commanded a platoon, a troop and a squadron in Vietnam. He also commanded a platoon, company, battalion and brigade in Germany or the CONUS. He holds 18 decorations for valor, including the DSC and five Silver Stars. He was the ADC of the 2d Armored Division when CPT Cone served as his aide-de-camp.

Combat Intelligence at Iron Star

by Captain Michael T. Pierson

Intelligence Preparation of the Battlefield (IPB), along with an aggressive counter-reconnaissance plan, is essential for a task force to defeat the mass, speed, and firepower of a Soviet-style regiment. An in-depth defense, in which the enemy is observed and attrited throughout the sector, is critical. This was demonstrated during the 1st Armored Division's (1AD) recent Iron Star Exercise, conducted at Hohenfels, Germany, against an Opposing Force (OPFOR) similar to that of the National Training Center (NTC). In Iron Star, battlefield intelligence proved a major contributing factor in the success or failure of a task force.

The critical first step in battlefield intelligence is the S2's Intelligence Preparation of the Battlefield (IPB). The information provided in this study, including threat evaluation, battlefield area evaluation, terrain analysis, weather analysis, and threat integration, is an important factor used by the commander and S3 in planning the task force mission. This intelligence assists the commander in preparing his intent and the S3 in developing the concept of operation to fight the battle.

The IPB is a continuous process of studying and analyzing the battlefield before and during a battle. It provides for maximum integration of combat intelligence – the enemy, the terrain, and the weather. Threat evaluation, using a doctrinal template, shows the enemy organization, equipment, and other important order-of-battle material (see Figure 1). This assists the commander in "seeing" the battlefield, and determining the enemy's caapabilities and probable courses of action.

A detailed analysis of the terrain within the area of interest identifies avenues of approach and mobility corridors which support the enemy's doctrine and employment into the sector. It provides the commander with information concerning areas of good observation and fields of fire, locations affording good cover and concealment (not only for the task force, but also for the enemy), any natural obstacles or key terrain which, if controlled, can have an impact on the battle.

Further study of the terrain allows the commander to answer other questions, such as: Does the area allow for appropriate maneuver space for the enemy to deploy his forces according to his doctrine? Does the road and trail network and cross-country trafficability favor the enemy or friendly forces if rapid reinforcement is needed at any given location? A detailed terrain analysis identifies friendly and enemy capabilities, vulnerabilities, and courses of action. It shows the commander where combat forces can and cannot move, shoot, and communicate

After analyzing the enemy and his doctrine and performing a detailed terrain analysis, the next step in the IPB process is to study the weather. Temperature, precipitation, wind direction and speed, ceiling heights, and visibility all have to be taken into account when preparing for an operation. The commander must consider if the forecasted weather or outlook favors the attackers or defenders. He must consider how snow or rain will influence terrain conditions. In developing the concept of maneuver, the S3 must develop two plans, one for good weather and another for a battle in reduced visibility. In Iron Star visibility was a critical factor, with fog and/or snow at times reducing visibility to less than 50 meters.

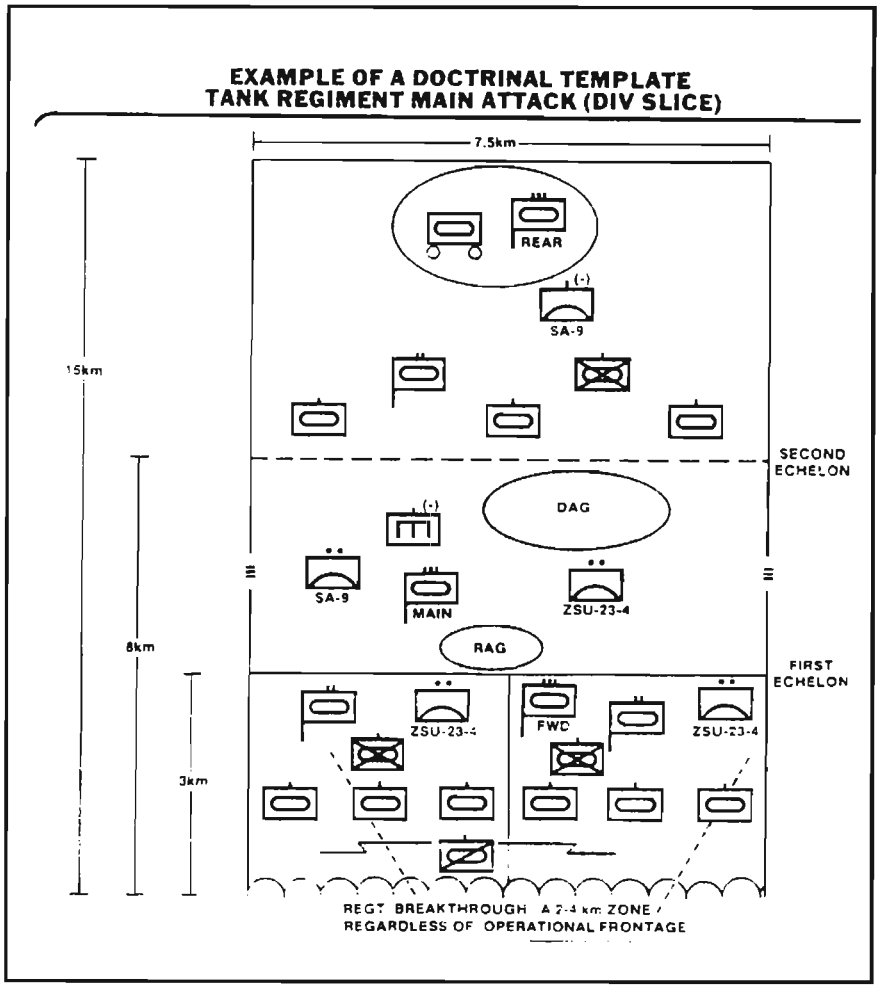
The final step in the IPB process is threat integration. Basically, this consists of determining how the enemy would "like" to fight – the *IDEAL* – and determining, because of actual battle conditions, how the enemy will have to fight in this battle – *the REALITY*. This produces a situational template. The situational template is basically a doctrinal template with terrain, weather restraints, and confirmed intelligence (such as combat losses) applied. It shows how the enemy has to deviate from his doctrine to account for these factors.

A situational template is the basis for event templating. Event templating is the study and analysis of battlefield events and enemy activities which provide indicators of the enemy's course of action. By knowing the enemy's doctrine of rapid movement along high speed avenues of approach and also knowing the terrain within sector that supports this type of movement, an enemy's courses of action can be predicted. An enemy force moving into the area will become visible to friendly reconnaissance elements when it enters certain areas along a mobility corridor. These areas are called named areas of interest (NAI) – locations (such as a choke point or crossroads) where enemy activity or lack of activity can be used to confirm or deny a particular enemy course of action. Once an NAI is designated and established as such, some type of reconnaissance element – scouts, recon patrol, observation point (OP), or ground surveillance radar (GSR) – must be assigned to cover it and collect the intelligence it provides.

NAIs can be established along every mobility corridor or avenue of approach into the sector. An enemy force can be tracked and followed, identifying its location, direction of

Figure 1

Doctrinal template shows enemy organization, equipment, and other important order-of-battle material which can help the commander "see" the battlefield, determine enemy capabilities, and predict his actions.



movement, and intent, giving the commander the timely intelligence he needs to fight the battle or to reposition forces.

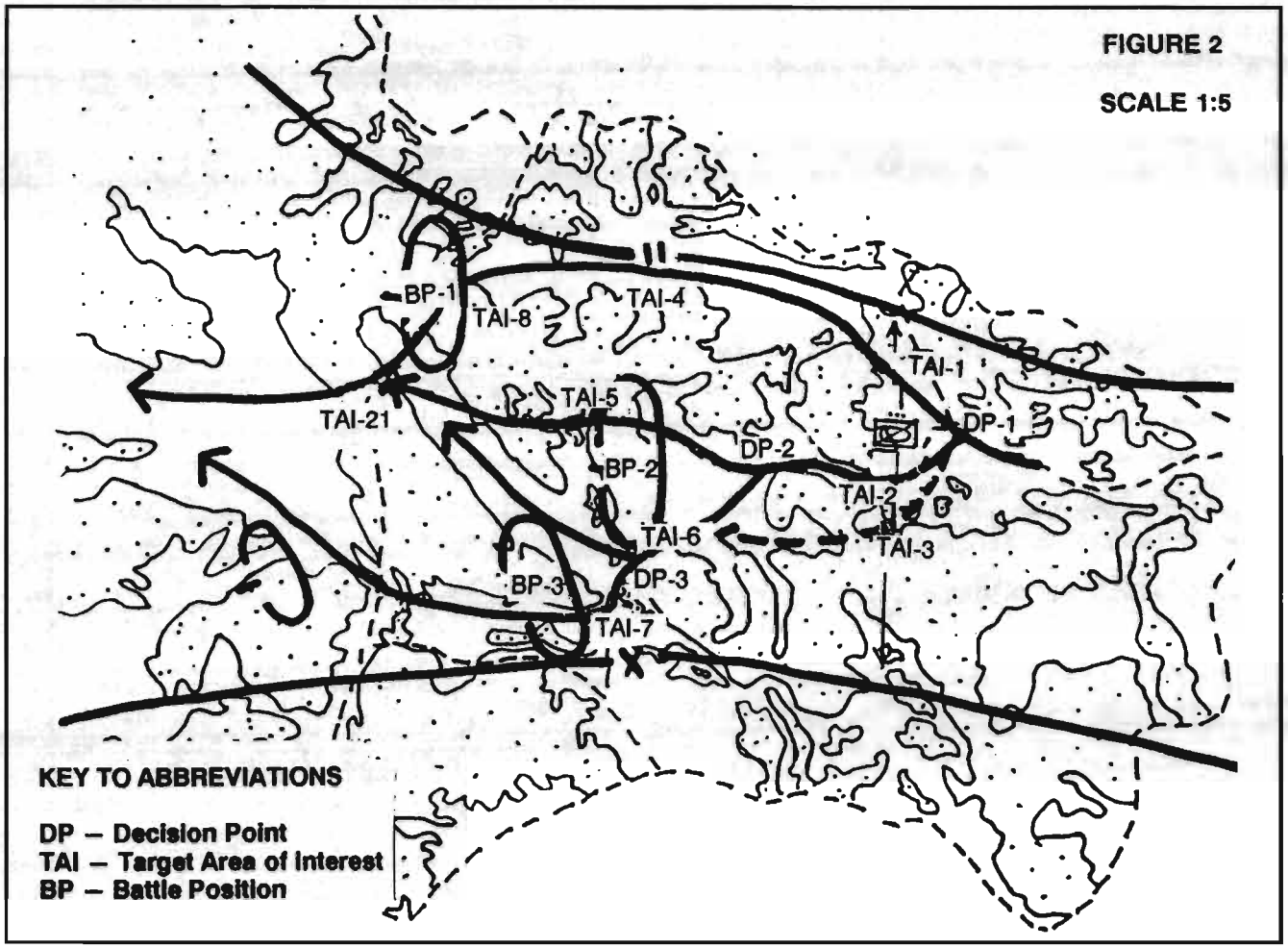
NAIs along each mobility corridor and avenue of approach can turn into target areas of interest (TAI). Each TAI is an area where the commander can delay, disrupt, or destroy the enemy, either with direct or indirect fire, or where he can confront the enemy with obstacles, causing him to abandon or change a course of action and forcing him into the strengths of the task force.

Once TAIs are established, decision points (DP) can be identified. DPs are areas which may require a tactical decision by the commander as a result of battlefield events. Identifying a DP can assist the commander in examining and making a decision before it is thrust upon him in a critical situation. Likewise, enemy decision points can be predicted, at which his probable courses of action can be identified.

The completed IPB gives the commander and S3 a good estimate of enemy strengths, composition, and possible courses of action, to allow them to develop the concept of operations. After the initial plan is developed, intelligence continues to play an essential role in developing the situation. Reconnaissance or counter-reconnaissance plans to determine the enemy's intention, along with continuous updating of the IPB, are essential in answering the commander's priority intelligence requirements (PIR) – those questions or items of intelligence that the commander needs answered to fight the battle.

When a task force is defending, a counter-reconnaissance plan is essential to deny the enemy the intelligence he needs and will attempt to gather from his reconnaissance efforts. The counter-reconnaissance plan must provide security for the task force by killing the enemy's reconnaissance elements well forward in the sector. Long range reconnaissance patrols (LRRPs) or OPs from a reinforced scout platoon must find enemy reconnaissance elements and maintain contact with them, without being detected themselves, until the enemy unit can be destroyed. A tank platoon, with its mobility and firepower, must be identified as a reaction force and on call to move forward or to intercept an enemy reconnaissance unit and kill it. Within tank platoons, some crews should be designated to be on alert in their tanks, with their night-vision equipment, to search for enemy recon units. Other crews must get out of their tanks and provide dismounted security for the platoon. This allows the infantry to move forward in sector to cover dead space and any dismounted infantry avenues of approach between battle positions. GSR teams must be placed forward in sector, either under direct control of the scout platoon leader or company commanders to ensure timely intelligence.

Different overlapping intelligence security systems are essential to provide mutual support and depth of effort. The areas which allow for easy infiltration into the sector by mounted or dismounted reconnaissance elements must be identified in the IPB. The S2 must stress to the S3 and commander the importance of covering these areas with surveil-



lance assets. The counter-reconnaissance battle must be fought aggressively by the task force, taking the battle to the enemy and forcing him to adjust his plans or mission because of his lack of intelligence. Counter-reconnaissance is a very difficult task, especially as proven in the German terrain in which 1AD conducted Iron Star. Dismounted infantry teams moving through the rolling forests during periods of reduced visibility were almost impossible to detect and stop.

In one mission conducted during Iron Star, a battalion task force, consisting of three armor companies and one mechanized company, was assigned the mission to defend in sector. The intelligence indicators showed that the task force was facing a tank regiment with over 100 armored vehicles (tanks and BMPs) and heavy artillery support. Terrain analysis identified three major mounted avenues of approach into the task force sector (see Figure 2). All three avenues of approach originated at the same point before branching out through the task force sector. At this point, DP-1, the enemy commander was faced with the decision of which avenue to use in his attack.

The S2 broke down the counter-reconnaissance battle into three belts. The scouts, consisting of the organic scout platoon, with its three APCs and three ITVs, were reinforced with a FIST-V, an additional four APCs, a squad of infantry, and a GSR team, and were given responsibility for the first belt. The critical task for the scouts was to identify which avenue the regiment would take (the defending commander's first PIR). They were assigned coverage of DP-1, TAI-1, TAI-2, and TAI-3, and were instructed to attrit the enemy, once spotted, with indirect fire. The scouts had three major threats to avoid: the enemy's reconnaissance elements searching to destroy them, the enemy dismounted infantry that would sweep through the area, and the rolling artillery barrage as the regiment advanced.

In the second recon belt, the mechanized team forward in battle position 2 (BP-2), in the central sector, was assigned coverage of DP-2, TAI-5, and TAI-6. The tank team in BP-1, with an attached GSR team, was responsible for the northern approach route and TAI-4, just at the edge of its engagement area. Finally, in the third belt, which contained the task force main defense area, the tank team at BP-1 was assigned coverage of TAI-8 in the north, while another tank company at BP-3 was assigned coverage of DP-3 and TAI-7 in the south. OPs were established by the companies and local patrols were run throughout the night to cover the dead space between battle positions.

Figure 2

In this Iron Star mission, a battalion task force covered three probable avenues of approach as it faced an enemy tank regiment.

"...Infiltration by the enemy infantry teams that identified BPs and obstacles was decisive and had a major impact on the battle..."

The task force commander and S3 were concerned with the enemy's massive amount of artillery, capable of firing 10,000-14,000 rounds. Five enemy POWs captured that morning gave evidence that enemy LRRP teams had infiltrated the sector the previous night. Locations of CO/TMs and obstacles were probably known by the enemy, and made the task force extremely susceptible to an artillery attack. The commander decided to move the CO/TMs into hide positions in an attempt to avoid any "pinpointed" artillery. OPs were left behind on all BPs, and once the enemy was identified, the CO/TMs were to move forward and reoccupy their BPs.

At 0400, the scouts observed BMPs moving forward and infantry dismounting. Enemy troops started moving toward the reinforced scout platoon. Indirect fire was called immediately, and killed several enemy soldiers. In the battle that followed, two scout vehicles were destroyed by the enemy infantry. Three OPs and a GSR team were forced to reposition. However, the scout platoon was still combat effective and capable of carrying out its mission.

The remaining dismounted enemy infantry headed toward BP-2, while another dismounted company headed toward BP-1 in the north. A critical factor in the north was the destruction of the attached GSR team by friendly tank fire (It was mistaken for an enemy vehicle). Enemy infantry teams began breaching the obstacles and attacking the infantry covering BP-2. Within minutes, there were over 60 enemy casualties; however, the mechanized team was now almost combat ineffective.

At approximately 0750, the enemy artillery barrage began rolling over the scouts and through the sector. One scout vehicle was destroyed by indirect fire. The scouts repositioned EAST (toward the enemy), and established two OPs (one dismounted) close to DP-1.

At 0830, the scouts reported approximately 45 tanks and 15 BMPs approaching DP-1 and turning southwest toward TAI-2. Shortly afterward, a smaller unit passed DP-1 and turned north toward TAI-1. Because the infantry company had been decimated in the earlier engagements (unknown to the task force), it was not able to displace to its alternate position (vicinity TAI-21) or to report the movement of the regiment as it turned at DP-2 and headed towards TAI-6. In its hide position, the tank company in the south avoided the artillery, but its OPs were destroyed by OPFOR dismounted infantry and indirect fire, and could not report that at DP-3 the regiment had sent a small fixing force to the south, while the main body had turned north. The regiment rolled through TAI-21.

Contact with the enemy was lost in the rolling forest terrain and further reduced visibility caused by scattered snow. The tank company in reserve did not see the regiment until it was too late. The tank company fought valiantly, destroying over 30 enemy vehicles in just a few minutes before being overwhelmed and destroyed by the regiment's mass and firepower.

The IPB drove the concept of operation — enemy avenues of approach, TAIs, and DPs were identified, and were for the most part accurate. A good counter-recon plan was established and a good counter-recon battle was fought. The scouts accomplished their assigned mission, surprisingly losing fewer vehicles and personnel than expected. But infiltration by the enemy infantry teams that identified BPs and obstacles was decisive and had a major impact on the battle. Forced to hide its companies to avoid artillery, the task force left critical TAIs and DPs covered by limited assets and not by the overlapping systems needed to ensure coverage.

If the enemy's dismounted infantry intent had been detected, and if the tank company assigned BP-3 had been able to reoccupy its position to attrit and give early warning, the reserve company could have been committed to TAI-2, plugging the hole in the task force defense and possibly changing the outcome of the battle.

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The "Name Enough" Division

The Remarkable Combat History of the 4th Armored Division, a Model for Mobile Warfare

by Brigadier General Albin F. Irzyk (Ret.)

Other divisions were acquiring nicknames, and Major General John S. Wood, commanding the Fourth Armored Division, was pressed to come up with one for his. He was so sure of the future greatness of his division that he declared, "The 4th Armored Division does not need and will not have a nickname – "They shall be known by their deeds alone." Those words, from that day forward, became the division's famous motto and the reason it was so often referred to as the "Name Enough Division".

At Utah Beach, as my tank prepared to roll down the ramp of the LCT that had carried us across the English Channel, the British skipper shook my hand and said, "Good luck". I was so sure that great things were ahead for us that, as I mounted my tank, I called to him, "You'll be reading about us. Remember, it's the 4th Armored Division." He laughed and shouted back, "Oh, you Yanks are all alike." Not quite, for I knew even then that we were something special.

When we landed in France, the *esprit de corps* of the troops matched the supreme confidence of the division commander. He had taught us to believe in ourselves, to feel that we could do anything, that we were the very best, a different breed. We all felt that we were destined for greatness, much the same feeling that a college football team must have when it senses the national championship, even before the first game has been played.

In the weeks ahead, authoritative, confirmatory voices began to be heard:

General George S. Patton declared, "The accomplishments of this division have never been equaled. And by that statement, I do not mean in this war; I mean in the history of warfare. There has never been such a superb fighting organization as the 4th Armored Division."

Freed American POWs reported, "The 4th Armored Division is both feared and hated by German front-line troops because of its high combat efficiency."

GIs themselves said, "It is the best damned armored division in the European Theater of War."

But before we learn too quickly what this division became, let us first examine how it all started.

The 4th Armored Division was activated on April 15, 1941 at Pine Camp, N.Y. For nearly a year and a half, the division trained hard all day, even conducting schools at night. During the winter of 1941-42, it experienced intensive cold weather operations.

By early fall of 1942, it was time to move on, and so we cut our ties to Pine Camp and headed for manuevers in Tennessee. While there, General Wood was reprimanded, ridiculed, and rebuked during weekend critiques of those maneuvers. His superiors told him that he had moved too fast, too far. They informed him that he just could not do it in combat with the enemy shooting, fighting, and attacking, so why was he doing it in Tennessee? He stood his ground and quietly told them, "We can do it, and we will do it." (And we did!)

The soldiers who would form the 4th Armored Division disembark from trucks as they arrive at Pine Camp, N.Y. in April, 1941.

From Tennessee, we crossed the continent to the Mojave Desert, and its wide-open, unlimited spaces for moving and shooting. Our training was imaginative, realistic, and daring. Who else but the 4th would put a company of tanks in a wadi against another company of tanks, both firing live .30-caliber machine gun rounds at one another? Everyone else might be satisfied with a moving target that was a wooden frame on a sled, but not the 4th. It used a real, honest-to-goodness moving tank at which we fired live .30-calibers.

Then it was on to the shimmering heat of Camp Bowie, Texas, with its great firing ranges, and an opportunity to sharpen our marksmanship with all the weapons in our arsenal. Shortly after our arrival at this Texas base, a lst Sergeant – apparently jaded by what seemed endless training – was heard to say to a company lieutenant, "I'll bet three months' pay that the 4th Armored Division never sees combat. Damned if we're not running out of places to manuever."

It was at Camp Bowie that the 4th went through a period of reorganization and become the first light armored division. By this time, too, a unique bond had developed between the members of the division and its commander. The men recognized that they had a very special leader who was deeply and emotionally involved with them. There has never been a division commander before or since who loved every man in his division as he did, and who in turn was loved by every man in that division. No other division commander saluted his men before they had a chance to salute him. This mutual and competitive saluting had a great deal to do with the extraordinary spirit which developed.

Still another important factor in the development of the division was the constant requirement for the division to send out cadres to new units in our ever-expanding army. We moaned at the time, for we had to send out some really top people. But also, and more importantly, we used the cadres to weed out. Providing these cadres gave us an opportunity to sift, cull, refine, polish. When we finally sailed overseas, our barrel was filled with big, red, shiny, juicy, firm apples, with not a rotten one in the bunch.

We said at the time that the 4th would go into battle "a division of non-coms." Because of extensive training, intensive schooling, and opportunity to cadre, many privates also knew the jobs of their corporals and sergeants.

Later, as combat thinned the ranks of officers and non-coms, these individuals would step forward and keep the division going with undiminished efficiency.

We were finally in England, but the training continued unabated on the fields, downs, and lanes of Wiltshire. It was during a dawn attack on the Salisbury Plain that we first heard and then saw the returning, damaged, aerial armada overhead. We knew instantly that the invasion was on and that we would soon be in France. It took time to extend the Normandy bridgehead, but we finally landed at Utah Beach on D+36.

It was not long after, in Normandy, that the 4th Armored won its military immortality. It slashed rapidly and aggressively out of a depressingly stalemated situation to seize the tactically and strategically important city of Avranches, a decisive objective that gave access to Brittany on the south and west and to Le Mans, Chartres, and Paris on the east. For us, the action in Normandy was strongly reminiscent of Tennessee. We shouted excitedly at one another, "Just like maneuvers!" (except that our ammunition was live, the incoming fire was real, and the prisoners did not have aggressor armbands, but strange uniforms) . The 4th spearheaded the main effort of the VIII Corps, and indeed, all of the U.S. ground forces. The U.S. Army Official History was later to say, "...the sensational success of General Wood's 4th Armored Division had exploded the nightmare of static warfare that had haunted the Americans so long in the Cotentin." *(Normandy was a part of France's Cotentin Peninsula. –Ed).* Despite

General Wood's protest that the enemy was to the east, where the war was to be won, his division was ordered SOUTHWEST to seize the Atlantic ports of Lorient, Vannes, and St. Nazaire. The 4th Armored burst out of Avranches and swept across Brittany like the hordes of Ghengis Khan. The Army's Official History later put it most succinctly, "A naturally headstrong crew became rambunctious in Brittany." Wood had already reached the outskirts of the Atlantic ports and had lost much valuable time before he was finally ordered to turn around.

Once the division headed east, it began what was to be an epochal sweep through France. As if to make up for lost time, one combat command left Lorient and moved 264 miles in 34 hours. From that point on, General Patton plotted the strategy and General Wood executed it and became the architect of the rampage through France. For weeks, as the 4th Armored went, so went 3rd Army. Wood's vision set the pattern for armor operations in Europe.

His division, operating like cavalry, slashed and sidestepped with speed and surprise. It was confident and cocky, and demonstrated a daring, audacious, hard-riding, fast-shooting style. The 4th bypassed strongly held positions with rapid flanking movements and deep penetrations. When towns or strongpoints could not be bypassed, they were taken in stride with sudden, headlong assaults, bruising power, and violent fire which broke the enemy. The division wasted no time in rebuilding blown bridges, but found other river crossings instead. It had a restless ardor for pursuit of a defeated enemy. Its outstanding characteristics were its ability to move and shoot, but above all to move. Movement became its middle name, constant momentum its trademark. A German colonel captured during this period, an officer who had commanded units in Russia, exclaimed, "...To know the commander of this armored division would explain to me how this army managed to achieve such a speed of advance, which in many instances

Three M4 Shermans of the 4th AD burn in a field outside Avranches, France after they were hit by 88-mm AT fire from guns emplaced on bluffs overlooking the city.

caught us completely unprepared." During the sweep across France, the Third Army was the south flank of the entire Allied Expeditionary Force; the XII Corps protected the south flank of Third Army, and the 4th Armored was the south flank of XII Corps. There was nothing south of the 4th Armored. General Wood never worried about his flanks; he echeloned in depth. He also developed a long, amazing, unique, and lasting relationship with the Thunderbolts and Mustangs of the XIX Tactical Air Command, which not only supported his operations, but watched his flanks. The teamwork between the XIX TAC and 4th Armored was probably closer in spirit and superior in quality to that of any other operation in WWII, and was not to be equaled again until the Vietnam war 20 years later.

During this period, we moved too rapidly and were too widely scattered for the conventional gathering of commanders for the typically detailed, specific orders. General Wood resorted to oral or "mission-type orders". We received these by radio, or on overlays jeeped in or flown in by artillery spotter planes. The orders consisted of a line of departure, a broad directional arrow (axis of advance), a goose-egg (objective) and the terse order to "get going at first light." That's all we had; that's all we needed. And once when we ran out of maps and orders, all General Wood needed to say was, "Go East!"

After nearly seven weeks of rapid movement and sensational and unprecedented success, the 4th was hit an anvil blow which staggered and slowed it. On the morning of September 18, German armor in two main columns attacked the vanguard of the 4th Armored around Luneville. Hitler had been trying to accumulate and concentrate armor in front of Patton. He now had the reconstituted Fifth Panzer Army, into which a great portion of German tank production had been poured. The German attacks and counterattacks, which were to be known as the Arracourt tank battles, would for the next nine days result in the biggest tank battles U.S. forces had yet fought in Europe. More than that, it would prove to be a supreme test for General Wood's superbly aggressive division. Could it fight and defend as well as it could raid and pursue?

The furious attacks and counterattacks by the Germans should have been no contest. They were equipped with the new, powerful, sleek, huge Panther tanks . The American low-velocity 75-mm Shermans were just no match for them.

But tankers of the 4th had already seen serious fighting, honed their skills, acquired experience, and

Major General John S. Wood, commander of the 4th AD, rests in a French meadow following the successful campaign to liberate Brittany. Many credited the unit's combat success to his leadership.

developed outstanding teamwork. They had learned their lessons well and quickly. They exploited their edge in maneuverability to take the Panthers in the side or rear; they fired at tracks to immobilize them; and they used their superior turret power traverse to get well-aimed shots off quicker, better, and faster. On September 19, one combat command alone reported 43 German tanks, mostly Panthers, destroyed or damaged as against losses of five Shermans and three tank destroyers.

By the time the dust had settled at Arracourt and environs, the Germans had suffered a mortal blow. In the most formidable tank attacks since the battles against the British at Caen, the 4th Armored definitely proved itself as admirable a group of warriors in hard, defensive fighting as in the racing pursuit.

Not long after, in a message to General Wood, General Eddy, XII Corps Commander, stated, "...the Germans are frightened by your superior equipment, frightened by your skillful tactics, and above all, frightened by your magnificent courage and will to win." Soon the rains came to France – constant, heavy rains. Streams and rivers flooded their banks. Water saturated fields became bogs with deep, sticky mud. The 4th Armored Division entered a completely new phase of operations. The division held back initially, pending an exploitation situation, but was quickly committed when the infantry bogged down. "Penny-packet" tactics now replaced massed armor employment. Because of the rain, mud, and terrain, the division had to operate almost on a one-tank front. It was subjected to continuous fighting under almost impossible conditions for armor. The division took its lumps, but amazingly – even with a seriously reduced tank complement and heavy losses among experienced personnel – it continued to grind ahead slowly but steadily. Even under these conditions, captured General-Lieutenant Fritz Bayerlein considered the northward advance of US tanks (4th Armored, XII Corps, 3rd Army) as a masterpiece of tank warfare, perfectly directed and executed.

Then, without warning, the division received a devastating blow that left it stunned, demoralized and reeling. Word spread like wildfire to all corners of the division that General Wood was relieved of his command. We were told that he was tired and sick and was being sent home for a rest, and that he would be replaced by Major General Hugh J. Gaffey, Patton's chief of staff. It was difficult to comprehend that, after all we had been through together, the men and their beloved division commander had parted company. With heavy hearts, we continued to slug it out.

Already beyond exhaustion, but with its nose in the Maginot Line, the 4th was finally relieved by the new and fresh 12th Armored Division to rest, refit, and reorganize. It was not long after, with broken tracks and tank and vehicle parts scattered in and around tiny, French farm villages, and with the rest, refitting and reorganizing still incomplete, when the "fire call" came. We were alerted for a move north where, according to confused reports which reached us, some sort of a German breakthrough had occurred. We rapidly put our vehicles and tanks back together again, packed up, and were soon moving toward a confused situation and parts unknown. Except for brief halts, the lead combat command traveled unceasingly for over 22 hours - half of one night, all day, and half of another night – under blackout conditions. Remarkably, they had travelled 161 miles over frequently difficult roads, without maps and without confusion, to the environs of a city called Bastogne. Such endurance was a tribute to both men and vehicles.

The 4th Armored was the vanguard of what President Nixon, a Patton admirer, later called the greatest mass movement of men in the history of warfare. Patton's troops had been poised to attack the Saar. He then abandoned this plan and ordered the major part of the 3rd Army to make a gigantic 90-degree wheeling movement and then drive north at full speed. Involved in this spectacular achievement were probably a quarter of a million men and thousands of vehicles, operating in damnable weather over often-icy roads, led by the 4th Armored Division.

There followed five days of bitter fighting. The 4th AD fought day and night; fought German tank counterattacks and fanatical defenses; and even fought snow, ice, and bitter cold. And just before dark on the day after Christmas, 1944, elements of the division succeeded in making contact with "the be-

Faces of the Fourth

There was time for mountain music during a break in combat in France, at left, but the stress and fatigue of the division's intense fighting later in the war was reflected in the weary faces of its men as they drew closer and closer to the heart of Germany.

leagered, battered bastards of Bastogne". The dramatic link-up of the two forces, an emotional, historic moment, broke the siege of Bastogne and was one of the great turning points in the Battle of the Bulge and of the war in Europe.

Shortly after, General Patton wrote to General Gaffey, the new division commander, "The outstanding celerity of your movement and the unremitting, vicious, and skillful manner in which you pushed the attack terminating at the end of four days and four nights of incessant battle in the relief of Bastogne, constitute one of the finest chapters in the glorious history of the United States Army."

And from the commanding general of the 101st Airborne Division, MG Maxwell D. Taylor, came these words, "It has been an honor and privilege for this division to serve alongside the 4th Armored Division. If we are ever in a tight spot again, it is our hope that the 4th Armored Division will be sent to get us out."

For three more weeks the division was engaged in operations against fierce German resistance to reduce the Ardennes salient.

Another possible German counterattack was feared, so the 4th was moved south into Luxembourg, where it remained for an extended period of time. When it was thrust back into action, the division embarked on a whole new phase of spectacular achievements that won it even greater glory. It crossed into Germany and quickly made its presence known.

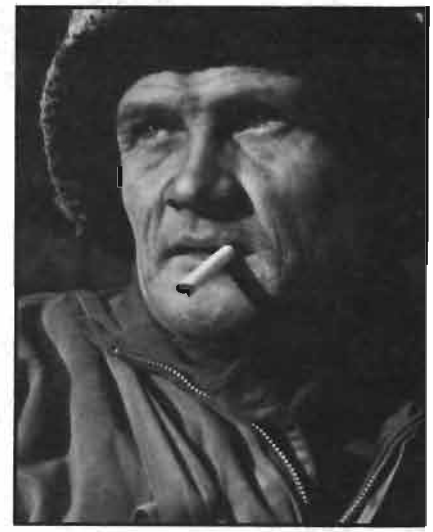
On 23 February 1945, the division seized crossings over the Our River in the vicinity of Vianden, and breached the Siegfried Line. Shortly after, it began a drive toward the city of Bitburg. The attack went well and by the end of the month the division had seized the high ground north of Bitburg and occupied the west bank of the Kyll River. Once again the division's advance was so rapid that many prisoners were captured and large amounts of equipment seized.

On 5 March, the 4th crossed the Kyll River and in actions so reminiscent and so characteristic of its performance during the early weeks in France, spearheaded the Third Army's advance to the Rhine. This river was reached north of Koblenz on 7 March, a distance of 55 miles covered in 48 hours. As a result of this advance, enemy resistance north of the Moselle and west of the Rhine was thoroughly disorganized. At that point, the division was the easternmost unit on the Western Front. It had come farther and faster to the Rhine than any other outfit. The division's feat electrified the Allies. After a long winter of bitter struggles for gains of yards, the division's 65-mile sweep from Bitburg demonstrated graphically that the lightning warfare of the past summer was still possible. A captured German general, Edgar Rohrich, was heard to say, "I'd ask nothing more of life than a chance to command a division like this 4th which I see here."

On 15 March the division passed through bridgeheads over the Moselle in the Trier area and in 36 hours reached Bad Kreuznach, a distance of 40 miles, thereby outflanking the Siegfried Line, covering the Sarre, and threatening the entire German defensive position in the Palatinate. Shortly after, the division reached the outskirts of Worms, thereby cutting the vital Frankfurt-Sarre lines of communication.

On the 17th of March, General Bradley sent these words to General Patton: "This is the second time in two weeks that this division has broken through the enemy's defenses and contributed so materially to cutting them to pieces. They have both been magnificent operations."

Virtually without halting, the division passed through bridgeheads over the Rhine in the Oppenheim area, and by 27 March had seized bridgeheads over the Main River at Hanau and Aschaffenburg. Still without pause, the 4th continued its dynamic thrust northeast and ever deeper into the heart of Germany. Major General Hoge, who had recently succeeded Major General Gaffey as division commander, received a message from General Eddy, his corps commander, which read, "Your immediate smash beyond the Main, one hundred miles to the northeast into central Germany, proceeded to open the



way for a sweeping corps advance and to electrify our Nation at home."

Much of the time, during this period, the situation map at General Eisenhower's headquarters showed a finger bulging forward of the front lines. That finger was the 3rd Army and its tip was the 4th Armored, still the spearhead. Although the terrain, the weather – in fact the total environment – was now vastly different from that of France in the summer and fall of 1944, the rapid movement, the aggressive slashing, hard-riding, fast-shooting, shock-action style of the 4th continued unabated.

As it spurred on its advance, town after town and city after city were left behind – Hungen, Grunberg, Ulrichstein, Schlitz. When the division passed Bad Hersfeld, it moved into what is now East Germany, and in its headlong dash to the east either overran or bypassed a series of major German cities whose names are no longer familiar to Americans. First it was Eisenach and then Gotha. And south of Gotha was Ohrdruf. It was at Ohrdruf that the men of the 4th had an experience that will be imprinted in their minds for the rest of their lives. Elements of the division liberated Ohrdruf Nord, or North Stalag III, on April 4th, the first concentration camp to be liberated by U.S. forces. By this time, men of the 4th were hardened warriors. They had seen death many times, in many different forms, as well as every imaginable type of wound. But what they saw here shocked, stunned, and silenced them. They saw at first hand the brutal evidence of the bestiality of man, and now had a clear vision of the terrible, inhuman Nazi beast that they were fighting so hard to defeat.

With renewed determination, it was time to move on. More major cities fell in their wake – Erfurt, Weimar, Jena, Gera and finally on to Chemnitz (now Karl Marx Stadt). As the lead elements of the division were approaching the environs of Chemnitz, the reins were suddenly pulled back tight and they came to an abrupt stop. Unknowingly, in their zeal to keep advancing, they had passed the "restraining line" which had been agreed to by the highest of councils. Ironically, after months of pushing hard, they were now told they had gone too far. Members of the 4th were then at the easternmost point reached by U.S. forces. Here, the command, "Go East" would no longer be given to them.

So after a brief pause – and with the German populace, because of their fear of the Russians, pleading for them not to leave – the division pulled back and then made a 225-mile forced march to the south, skirting the Czech border all the way to a location on the Danube River. From that point, the division attacked to the northeast, through mountain passes, through the Sudetenland, and well into Czechoslovakia. They were stopped once again for political reasons, something the enemy had never been able to accomplish, and this time they finally stopped for good. It was the final stop, for VE Day came soon after. Elements of the 4th met elements of the Russian Army, and subsequently moved to their occupation areas. Thus ended an amazing 10-month odyssey.

A group of ordinary men had done some most extraordinary things. They had led the breakout in Normandy, captured Avranches, swept across Brittany to the Atlantic, turned around, set the pattern for armor operations in Europe, and rampaged across France, won one of the great tank battles of the war, made the reckless, wide-open, headlong dash to Troyes, slogged through rain and mud to the Maginot Line, pulled back and made the "fire call" to Bastogne, Belgium, relieved the 101st Airborne, moved back to Luxembourg, spearheaded 3rd Army's advance to the Rhine, breached and outflanked the Siegfried Line, liberated the first concentration camp, swept deep into central Germany and reached Chemnitz, the easternmost advance of Allied forces, moved south to the Danube River, pushed aggressively into Czechoslovokia, and met the Russians. No other division moved so fast, ranged so far, or covered so much ground. Three thousand miles were registered on the mileage meters of the 4th Armored Division's forward echelon vehicles, which only moved from one division command post to the next. Combat miles covered by the battalions in the 295 days from Normandy to Czechoslovakia were nearer double

the 3,000. The combat troops had an unsurpassed and unforgettable tour of Europe that could never be matched.

In ten months, the division took 90,364 prisoners, killed 13,641 of the enemy, wounded an estimated 30,000 more; destroyed or captured 847 German tanks, 3,668 other vehicles, 603 artillery and antitank guns, 1,192 horse-drawn wagons, 103 locomotives; shot down 128 Nazi planes; took scores of major cities and hundreds of towns and villages. The 4th's losses were 1,519 killed, 5,029 wounded and 270 missing. A total of 418 tanks were lost.

Members of the 4th won more than 4,000 individual decorations. Three were Medals of Honor, and there were 34 Distinguished Service Crosses, 802 Silver Stars, 3,031 Bronze Stars, 88 Air Medals, 11 Soldiers Medals, 92 Croix de Guerre. Forty men received battlefield commissions as officers and nearly 6,000 received the decoration grimly known as the "German Marksmanship Medal" – the Purple Heart.

The division compiled a record unsurpassed in results achieved as compared to casualties taken. Perhaps there has never been a division which inflicted such discrepant losses upon an enemy. Statistics portray a graphic, remarkable portrait of the division's achievements. Yet, numbers cannot depict the full, complete picture. There is absolutely no way to calculate mathematically the paralyzing effect and the consequences of one of the many armored breakthroughs produced by the 4th. There is no equation yet developed that determines the value of an important piece of ground that has been overrun or a strategic city or bridge that has been captured. Add these elements to the cold statistics and the total reflects a most imposing record.

"...No division had been exposed to more different facets of training in such a wide variety of locations..."

The Third Army and the 4th Armored have always been mentioned in the same breath. One final, revealing statistic confirms that relationship. Of 3rd Army's 281 combat days, the 4th was in 3rd Army for 280 of them, more than any other division.

Earlier, it was mentioned that the 4th Armored had no formal nickname. Newspapers and magazines had a field day, however, and applied an almost endless number of monikers in their published accounts of the division's exploits. Among the most frequent appellations: "Patton's Best", "Breakthrough", "Patton's Favorite Spearhead", "Crack", "Ubiquitous", "Irrepressible", "Phantom", "Invincible", "Immortal", "Fabulous", "Hard-riding", "Romping".

All of these prompt the inevitable question: "Why all the accolades?" "Why was this division so different?", and the most often-asked, "What made the 4th Armored Division great?"

There are so many intangibles that the answer still remains difficult to box in. Of his men, General Wood said, "I have seen nothing like them in the three wars I was part of, in my time". Yet in 1960, a few years before his death, General Wood himself had difficulty finding an answer to the question. He stated, "I wish I were able to draw up a set of rules for developing a fighting unit like the 4th Armored Division. I am convinced that it was almost unique in its fighting characteristics and esprit, but it did not conform to the rules. In fact, that is perhaps its most outstanding characteristic. Outsiders could never understand what made us so different nor just how we operated." He continued, "...But for the production of a fighting organization like the 4th Armored Division, it would be like giving an artist a set of draftsman's rules and a color chart and asking him to produce the Mona Lisa. There is very little science in command – it is merely the most difficult of arts, done with the lightest of touches!"

Although I was a member of this division, the question of greatness has long puzzled me, together with other soldiers, correspondents and historians. What combination of what ingredients gave this division its greatness?

A self-propelled 105-mm howitzer of the 4th AD rolls across a pontoon bridge over the Main River, near Hanau, in late March, 1945.

The personnel of the 4th had the same geographic and ethnic mixes, the same age group, the same educational and economic levels, membership in the same strata of our society as all other divisions. Nothing different – no advantage here.

However, I do believe that there were some ingredients that were peculiar to the 4th that gave us a big edge over other divisions. The first of these was training. We were provided with the time and the places. The division had the blizzards of northern New York, the spaces and sand of the Mojave Desert. In between were the rivers, streams and valleys of Tennessee, the great firing ranges at Camp Bowie, and the opportunity for the final tune-up on the Salisbury Plain of England. No division had been exposed to more different facets of training in such a wide variety of locations. By the time it crossed the English Channel, the division was superbly trained, already seasoned, and honed to a razor's edge. No unit could have been more ready for combat than we.

The second ingredient was the demand and requirement to send out cadres. This turned out not to be a disadvantage, but a great advantage, for the division was left with quality troops throughout; individuals who from top to bottom were knowledgeable, experienced, dedicated, professional.

The third ingredient that we had that no other division had was Major General John S. Wood. This was a unique, unusual, and truly great leader – undoubtedly the greatest division commander of World War II. Liddell Hart, the eminent British historian, military writer, and critic, referred to him as "The Rommel of the American armored forces...one of the most dynamic commanders of armor in World War II and the first in the Allied Armies to demonstrate in Europe the essence of the art and tempo of handling a mobile force." General Wood believed deeply in sparing the men he had the honor to lead unnecessary hardships and useless losses, and possessed the willingness and desire to share their hardships and face the same dangers. The men knew that he referred to them as "my people". His was leadership at its absolute best. He was not only loved and admired, but today is idolized. As General Jacob L. Devers simply stated, "They would follow him to hell today."

General Jacob L. Devers, then-CG of the 6th and 12th Army Groups, addresses the men of the 4th Armored Division at Landshut, Germany in June 1945, as the unit was awarded the Presidential Unit Citation.

The fourth important ingredient that I am sure of was our army commander – General Patton. He was the right one for us, and was daring, imaginative, audacious, visionary. But to be successful, he needed the right tool – the 4th Armored. Patton plotted the strategy and Wood executed it. Patton and the 4th – the perfect combination.

Supposing our army commander had been Monty. He would have told us to move three miles and we would have moved three miles in a day. The world would never have known that we could have moved 20, 30, or even 50 miles a day. General Devers knew we could, for he said, "You were always on my left, but we knew you were at the front of Third Army. You did not stop at 5 or 15 miles a day, but went 70 or a few miles less." So we had the right army commander to pull the best out of us – to send us on impossible missions which we made possible. The fifth ingredient that we had was people. We had Creighton Abrams – "Abe" – who was the hero, the architect of the victory in the tank battles at Arracourt and whose tanks were the first to link up with the 101st. He became the number one soldier in the Army, its chief of staff, and the one for whom the current main battle tank is named.

There was Bruce Clarke, who left his post as division chief of staff to distinguish himself as a combat commander in the sweep across France. His exploits were rewarded with a promotion and transfer to the 7th Armored Division, where he gained fame in his tenacious defense of the St. Vith area during the Battle of the Bulge. He later became the commander of the United States Army in Europe.

The division had 1LT, (later CPT) James H. Fields, who won the first Medal of Honor to be awarded in Third Army – "He gave himself first aid by cramming the compress from his first aid packet into his mouth. Holding another compress over his right cheek, he continued

shooting with his left hand. When three Panther tanks moved up, Fields shot the tank commander of the lead tank left-handed. . ."

And who but a cocky member of the 4th would have the audacity, the effrontery – with Germans prowling around him in all directions – to boldly, recklessly announce, "They got us surrounded again, the poor bastards!" Sgt. Constant A. Klinga uttered what was to be an oft-quoted 4th Armored battle cry just outside Avranches. He said it for the last time in Germany, as he was killed beyond the Seigfried Line.

People. Yes, people – thousands of them who were inspired, dedicated, who did everything that was asked of them and more. People who had an easy confidence and were a bit cocky; who took savage satisfaction in their expert use of the shock power given to their division; who turned over at least three times in critical slots and continued to operate with undiminished efficiency; who were motivated always by the highest esprit de corps. People – yes, outstanding people – all of them.

The final two ingredients that the division possessed were spirit and a soul. Early on, the division – because of the attitude and actions of its outstanding leader – developed an indomitable, unquenchable spirit that persisted until the end of the war. It began simply with pride in saluting and from then on manifested itself in every word, move, action. With spirit came a soul. That soul had elan, aggressiveness, the will-to-fight, dash, confidence, audacity, and a debonair, reckless, but ordered, discipline. The soul of the 4th Armored will march forever and will never die.

The ingredients unique to the 4th Armored mentioned above partially explain the question of its greatness, but because of intangibles, speculation among students of World War II will persist and the answer will probably never be fully developed.

We came to one last unique aspect of the division. After significant achievements in the battle across France, General Wood began to receive recommendations for the award of the Presidential Unit Citation for platoons, companies, and battalions which had distinguished themselves during the weeks of combat. He refused to approve any and declared that he would not single out any unit within his division. He said if such an award were to he granted, he would wait until the entire division, as a unit, received it. He showed great prescience and faith in his division.

On 28 March 1945, the "Stars and Stripes" carried a five- paragraph story that stated, "The War Department, by direction of the President, has cited the entire 4th Armored Division for 'extraordinary tactical accomplishment during the period from December 22 to March 27, inclusive'." No one in the 4th saw the story, because the division was then roaring northeast into Central Germany after crossing the Main River.

Nearly three months later, the troopers of the division were dressed in fresh-pressed ODs instead of battle-stained combat jackets, wore lacquered helmet liners instead of mud-spattered tank helmets. They stood proudly in rigid ranks in Landshut on captured German soil, which they had played such an important role in seizing.

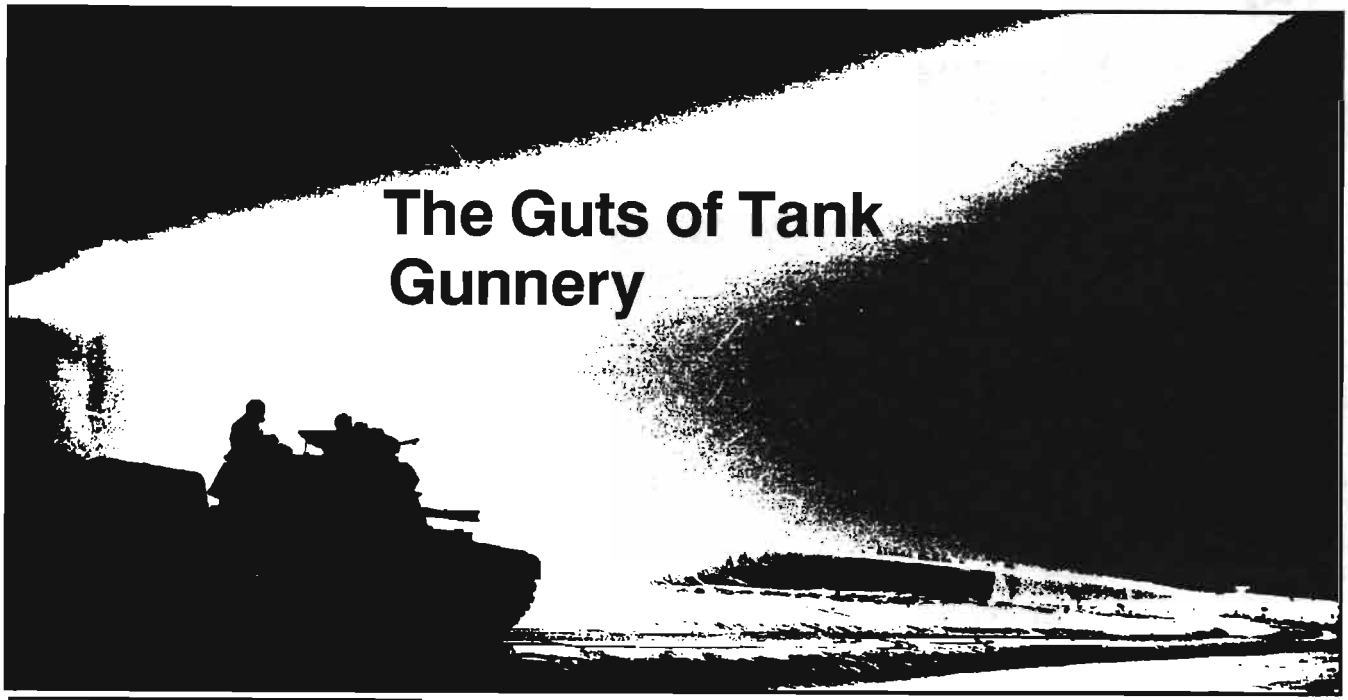
They shivered with emotion as they heard the language of the Presidential Citation echo across the German field. Then, with eyes glued to it, they watched the red and green colors of their beloved Fourth Armored Division dip while the four-star general tied the blue streamer of the Distinguished Unit Citation to the staff and then saluted it.

They listened as General Jacob L. Devers, the former commander of the Armored Force, say, "I am proud to present this citation to the Fourth Armored, and I say this with a great deal of ego, for I feel I had a part in the training of this division."

So on June 14, 1945, at Landshut, Germany, the Fourth Armored became the only tank division and the second entire division in U.S. Army history to be so decorated by the order of the President.

They now stood ready for their finest and last review together. It was to be the first division formation since Camp Bowie, Texas. Once again, they rose to the occasion. After ten months of combat, they were now momentarily parade soldiers again. As the band moved out, unit after unit passed the reviewing stand tightly dressed, in step, with chests fully extended. They marched well and impressively, like the proud veterans they now were. As they left the field, they knew this would be the last time they would be together, that the division would soon begin breaking up. However, they were consoled somewhat by the knowledge that they were marching into the pages of history and would one day occupy their rightful places in the pantheon of combat heroes.

BRIGADIER GENERAL ALBIN F. IRZYK trained and fought with the 4th AD from its formation in 1942 through five campaigns in the European Theater and service in the postwar occupation. His 44 months of overseas service included assignments as a company commander, battalion commander, division G1, G3, and chief of staff. He commanded the 8th Tank Battalion during the relief of Bastogne. His long and illustrious military career later included service at numerous posts in CONUS, USAREUR, and the Pacific.



The Guts of Tank Gunnery

Winning the Peacetime Battle

Part II

by Captain Kris P. Thompson

Self Test

- Did all platoon leaders and commanders in your unit qualify on tank table VIII?

- Was each crew in your unit tracked by record, and has each made progress through the UCOFT matrix?

- Did your unit execute a complete run with all of your crews in the allocated range time?

- Did any of your crews lose points because of boresight error, or because of wrong ammunition or range being input in the computer?

- Did your crews quickly react after a target miss and still qualify the engagement?

- In your opinion, did obscuration significantly lower the scores of your crews on Tank Table VIII?

- Were your crews slow or did they miss targets for unexplainable reasons?

If your answers to any of these questions disturb you, this article may be worth your time.

Introduction

The purpose of this article is to follow-up the recommended M1 tank gunnery training program[1] with suggested techniques and tips to use while executing it. The specific areas to be covered include techniques of:

- Leadership (gunnery specific)
- Conducting training
- Engaging targets
- Weapons system manipulation/ switchology.

There is a wealth of text describing or referring to the principles of killing an enemy target,[2] but virtually nothing available that extracts detailed, step-by-step analysis of the techniques involved. This article will attempt to logically present techniques which have heretofore been passed only by word-of-mouth among master gunners and experienced tank commanders, and not collected in any one spot. The target audience includes new platoon leaders and commanders who are stepping into M1 Table VIII gunnery for the first time. Experienced leaders, may use this article as a quality control check on training already in progress, and above all, realize this is one commander's viewpoint based on experiences of two Level I Table VIII densities at Grafenwoehr in 1985/86. Tips and training techniques that you have come upon need to be publicized so we all can perfect the art of putting steel on target.

Leadership Technique

Given the complex level of today's weapons systems, it is more difficult for leaders to achieve and maintain an adequate proficiency level and be combat ready because of the time and resources involved. The commander and platoon leader must be intimately involved with all training and should strive to reach the highest individual proficiency level possible.

This can only be done by leading the particular unit through all facets of gunnery training. They should not only be "present" at all gunnery training, and not only participate in the training, but the officers should shoot and be tested the same as other vehicle commanders.

Cavalry commanders should qualify on both M1 and M3 Table VIII in order to fully appreciate the

capability of each system and to be able to properly and thoroughly direct/evaluate the training of their subordinate platoons. It is important that leaders – commanders, platoon leaders, and platoon sergeants – conduct the after-action review. That is where the learning (reinforce the good, adjust or change the bad) and, by inference, the training, take place. That is where we earn our pay. Hands-on weapons proficiency is, in the author's opinion, an important, if not *the most critical element*, of "warrior"-style leadership.

A note here on crew stabilization. Try as we might, it is inevitable that there will be some crews that cannot be stabilized, due to unforeseen reasons (i.e. emergency leave, injury, disciplinary action/reduction). Although unproven by hard data, the author postulates that time normally measured as being adequate for crew stability can be shortened by emphasizing that a high number of hours out of the available time be spent in the UCOFT, on TCPC, or studying together. In other words, the crew that spends, over the course of two weeks, 4-6 hours per day together in intensive gunnery training can have the stabilization benefits equivalent to a crew that has been together for a few months in low-intensity general training.

In this manner, crew stability measured on a calendar basis can be deceiving – the statistics can be beat, to a certain extent, by maximizing high-intensity, gunnery-oriented training with time available.

Training Technique

UCOFT. By now, all agree that UCOFT is a tremendous benefit to tank crews, but the use of the simulator has become a matter of controversy. In one camp are those that advocate matrix progression, and in the other are those that favor Table-VIII-like exercises extracted from the matrix.[3] Assuming that UCOFT is available year-round, the best gunnery results are obtained by

"...By now, all agree that UCOFT is a tremendous benefit to tank crews..."

matrix progression. There is a high relative correlation, in the author's experience, between certification/matrix progression and live-fire Table VIII results.[4] Table VIII-equivalent exercises should be run only after certification or in a periodic competition (given a training schedule which constrains time available per crew in UCOFT).

TCPC. A tip here is to use MILES full-up and include target interface devices, Hoffman devices, and blank 7.62-mm machine gun ammunition to better simulate the conditions. The implied requirement is that the chain of command must be trained to a high proficiency level on the use and installation of MILES in order to minimize preparation time. A little time invested on learning to use this valuable training aid will reap big dividends in developing gunnery skills and is the best way to ensure integrity in the gunner's lay in what is normally a dry-fire rehearsal.

Range Time Management. Techniques for efficient and effective use of available live-fire range time and ammunition should be emphasized. Although being able to put more crews downrange does not necessarily equate to higher scores, it is a good indicator of whether or not a unit is prepared, motivated, and in a high state of combat readiness.

The best technique is to line three or four vehicles up in a ready line behind the firing vehicle. These tanks should be checked for communications one last time before proceeding to the firing position (especially when using the "jump" radio system – test the system on an alternate "jump" frequency). The usual rule on European ranges is that the crew is given two minutes to fix any maintenance problem or it is pulled off the firing position. The commander and platoon leaders must be ruthless in enforcing this rule on preparatory tables because it does help to keep tanks moving through a range.

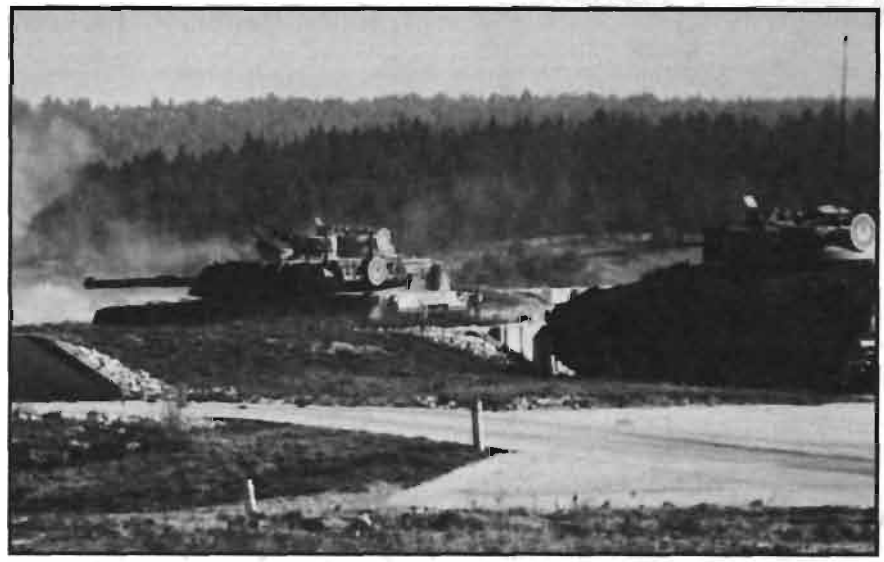
Leaders should be held accountable for the complete readiness (prep-to-fire checks, communications, maintenance) of each vehicle and the alertness of the crew waiting in line.

In exceptional situations during preparatory tables, or when it is the gunner's first time on a live-fire range, each engagement should be run dry-fire quickly, once or twice, to ensure the gunner is ready, and a little coaching should be taken care of on TCPC, but the 45 to 60 seconds it takes to execute is not a serious blow to range time. It settles any butterflies, works out any last-minute problems and greatly enhances the training value of each live round by giving the gunner more confidence through success and repetition, which is what we are getting more and more into in these times of constrained resources. This could be compared to a rookie batter in baseball taking a practice swing before stepping into the box.

Again, the time involved in doing this for a few selected crews throughout the squadron/battalion should not significantly impact range time utilization.

Lastly, the critical activity for range time usage is not the actual shooting, which usually goes by quickly, but is the time it takes to "come up on the jump net," load and test-fire weapons, and most importantly of all, the time it takes to clear the vehicle. Prep-to-fire checks and radio checks on alternate jump nets should minimize time on the first two, and a technique now being used at Grafenwoehr

The author contends that cavalry commanders should qualify on both M1 and M3 Table VIII.



by 7th ATC on the qualification table can take care of the last one.

The procedure is for the clearing tank to use a parallel lane to exit the course and stop even with the next firing tank to clear. In this way, both tanks are "on line"; one can be cleared while the second is test-firing weapons.

Engagement Technique

Prep-To-Fire, Boresight Inspections. Nothing further needs to be said here about the importance of quality prep-to-fire checks and boresight.

A further technique is to require the leaders to inspect these checks with the master gunner prior to firing. Also, boresight data and computer data should be recorded (the author's squadron uses a pre-printed 2404) and kept on file, which will allow most errors to be quickly exposed during the inspections. There is a fine line here between training value and "inspecting" this area on the one hand and actually "preparing" or boresighting the tank for the crew on the other.

Better training results are achieved by inspecting preparatory checks and boresight to ensure the crew fires live rounds with a tank fully prepared — the intent being to get your money's worth out of each round.

Pre-Engagement Checks. The following may also be perceived as heresy by some, but results achieved using this technique justify any minor drawbacks. During intensive training on the UCOFT, it was found to be necessary to always check all switches and knobs to ensure proper index (i.e. ammo, gun select, laser armed, battlecarry index) and to identify the left and right limits of the sector of fire (learned through experience) prior to each engagement in all exercises. It was also found, during live-fire exercises, that it was helpful for the crew to quickly review the possible target arrays for the upcoming engagement. Combining these checks and including them in the crew report ensures complete preparation of the vehicle and also relaxes new crews. After receiving instructions from the tower to battlecarry, it sounds like this:

TC: "Watch for two moving tanks, Battlecarry one five hundred indexed, crew report!"

Gnr: "SABOT indexed, gun select to main, laser armed last return, identified TRP 1, 2, 3, (done as he looks through the sight to the range fans). Gunner up!"

Ldr: "SABOT loaded, loader up!"

Drv: "I'm in drive, driver up!"

Advanced Engagement Procedures

Reengagement. Amazingly, when many units conduct TCPC, they train exclusively on the basis of all target hits and are unpleasantly surprised when, "down-range", they are confronted with the unforeseen situation of a target miss. The TC is shaken, stumbles on the subsequent fire command, and panic sets in among the crew as voices increase in pitch and become excited. After achieving proficiency in the "crawl" and "walk" type tasks, training should focus on integrating subsequent fire commands and re-engagement actions/drills. Crews should have these memorized and practice them on TCPC so that they can instinctively react to kill any target missed on the first attempt. Proper manipulation of the vehicle and system will make it possible to still score 100 points after a first round miss. Techniques of this type are:

- In the defense, immediately backing into turret-down after engaging all targets presented, thereby stopping the engagement time, and reengaging as the vehicle rolls back into the hull defilade (see below).
- Having the gunner scan after engaging all targets and "verbalize" that each target is down.
- On the M60A3, automatically reengaging the rear set of troops, after both sets have been engaged once, if there is any doubt at all that target effect was achieved — no penalty here as time stops on target effect.
- Immediately reengage all targets standing and not assume or guess about target malfunctions.

Misfire/Stoppage. The same philosophy as mentioned above must be applied here — practice and rehearse all the possibilities (there are not too many) until it is instinctive. Main gun misfire procedures are generally standard, but actions on machine gun stoppage vary. On the caliber .50 engagements, the gunner should check the coax during pre-engagement checks to ensure it is ready to cover the troop target for the tank commander. On the M60A3, the TC should align the

"Tactical genius for maneuver and a perfect C3I complex are wasted effort if our tanks cannot close with and destroy the enemy..."

caliber .50 400-meter line with the coax reticle on a selected 400-meter target, in this way being prepared to engage troop targets in the event of a coax stoppage. UCOFT teaches and trains required preparation and manipulation skills, and if the crew has certified, they should be able to implement the above easily.

Visual and Laser Obscuration. In any temperate climate, local and target obscuration will be present in dry weather. A condition noted by the author at Grafenwoehr is that, at certain times, the crew can identify the target but the laser will not penetrate the dust, left from prior engagements, which is "hanging" on the range. Cross-wind, if present, diminishes the effect of this occurrence as the dust is blown off the range faster. Actions on visual obscuration are easy to remember and rehearse – in the defense, simply backing up while announcing "target obscured" and reengaging when the target can be identified; on the offense, moving through the obscuration, if local, or announcing "target obscured" if the obscuration is in the vicinity of the target.

For laser obscuration, *UCOFT is an invaluable aid.* Obviously, the battlecarry technique is the answer, but more is involved than just giving it "lip service." Crews must index the appropriate battlecarry range for each engagement – the midpoint for target ranges possible or listed in the tasks and conditions – as part of the pre-engagement checks. Next, the crew must be rehearsed enough that the tank commander pushes the button quickly once the reticle is in the area of the target so that lead input will be normal, just as if the gunner had lased. This sounds complicated, but UCOFT trains the crew to be extremely proficient in this technique in scenarios with LRF failure and moving targets on offensive engagements. If conditions are bad, take into account wind direction when planning target engagement sequence – for instance, you may want to engage the far target first so the impact of the round will not obscure the near target; or left target first so the wind blows dust to the left and away from the right target, etc. Rehearsal is of paramount importance.

Manipulation Techiques

The collection of tips and ideas that follow deal mainly with "switchology", which is the single most important element (excepting leadership) in tank gunnery:

Warm-up. During UCOFT training, a phenomenon was noticed: rarely did crews do well on their first one or two exercises. Once they were warmed-up, however, they progressed at normal rates. This can be attributed to reacquainting the gunner with the "feel" of the power control handles, rate of traverse and elevation, and tracking technique. The solution is to have the gunners and tank commanders either conduct tracking and manipulation exercises, or ideally, dry-fire each engagement (in track park or ready line, as range time should not be wasted). They should practice switching from three to 10-power magnification, tracking the target, firing, and so forth, in the sequences called for by each engagement.

System Use

Override. Traditionally, the tank commander designates the target and lays the main gun for deflection, with the gunner taking over once he has identified the target in his sight. A great deal of confusion is caused under stressful conditions using the traditional method when the TC hands off to the gunner – especially on the move. Another technique of laying the main gun is for the tank commander to instruct the gunner, using "traverse right" or "traverse left," "steady," and "on." From a position where the sector of fire is restricted – i.e., a gunnery range, heavy vegetation, urban terrain, assigned TRPs located close together, etc. – best results are achieved by letting the gunner have complete control of the turret traverse and using the latter method. A proficient gunner can

Figure 1. Correlation Between Certification/Matrix Progression and Live-Fire Table VIII Results - June 1986

	Certified Crews	Crews 1/2 Way Through Matrix Completed Defense Engagements)
Crew Average	940	795
Distinguished	8	3
Superior	3	6
Qualified	3	5
Unqualified	0	7

Top 4 crews (including two 1000 point scores) and 7 out of top 9 crews were certified on UCOFT.

traverse and make a precise lay on a target much faster than with the tank commander controlling the turret.

Defensive lasing. Crews, especially those training intensively on UCOFT, should ensure that, in the defense, all lasing is executed and evaluated while turret-down – when engagement time is not running and the vehicle is not exposed. Subsequent changes in range, from the tank moving to a hull-down position or when shooting moving targets, are not significant enough to materially affect the strike of the round. The gunner should identify and lase to the target in turret-down and only then should the TC give the command, "Driver move out, gunner take over."

Shooting on the roll. Shooting the first round of a defensive engagement while the tank is rolling into hull-down (after, of course, the gun has cleared the berm) makes for a quick opening time and is no less accurate than waiting for the tank to come to complete stop. On those engagements with one target, a tank can get two or three shots off (in the rare event of a first-round miss) with an engagement time still under the 100-point time standard, by shooting on the roll, followed by rapidly backing up into a turret-down position (thereby stopping engagement time immediately after the shot).

Gunner Techniques. A summary of well-known techniques which, if not watched, will cause more than their fair share of missed shots:

Aiming Point. Always at the center of visible mass. When engaging moving targets, ensure the gunner aims center mass on the hull portion of the target. This puts more surface area within the normal area for round dispersion and minimizes any lead input inaccuracy from tracking.

Tracking. Watch for gunners, especially inexperienced ones, who "ambush" targets. The most successful techniques, whether or not it is scientifically based,[5] is for the gunner to track a target (either a moving target or when engaging a stationary target while on the move) laying center mass with the same sight picture for 2-3 seconds before firing. This seems to provide the most accurate lead solution to be fed into the computer.

Dump lead. Ensure gunners dump lead when going from target to target. The best way is to release the palm grips immediately after the shot is fired, then traversing to the next target without lead input which makes it easier to adjust the reticle on target.

CONCLUSION

With the officer corps representing between 25 percent and 33 percent of the tank commanders in the Army, all armor officers must be highly skilled in the employment of the M1 tank. To be proficient with the tools of our trade is paramount.[6] If there is one area of training in which attention must be focused, it is training to hit and kill enemy targets. Tactical genius for maneuver and a perfect C^3I complex are wasted effort if our tanks cannot close with and destroy the enemy. Take the time to learn about the tank, become proficient with it, and lead your soldiers from the turret.

FOOTNOTES

1 Abbott, Thompson, and Ulmer. "Winning the Peacetime Battle." ARMOR, March-April 1987. (Hereafter "Winning.")

2 FM 17-12-1 (final draft) Tank Combat Tables; Chapters 5-6; "Winning." Footnote 1.

3 FC 17-12-7-1. Unit Conduct of Fire Trainer (UCOFT). Training device support package. Aug 1985, pp. B-28-B-31.

4. See Fig. 1

5 FM 17-12-1, p. 1-6. Although the manual indicates that the lead solution "appears to be a virtually continuous correction" the technique of lasing to the target, followed quickly by a shot, seems to give a greater probability of target miss doubtful left or right. If, after the lase, the reticle is kept center mass, then steadily tracked center mass (same sight picture) for 2-3 seconds, the lead input by the gunner appears to be more accurate.

6 A quick reading of FSKM 17-3-2, Armor In Battle, Armor School, 1985, should convince anyone that company grade officers need to be gunnery experts.

CAPTAIN KRIS P. THOMPSON was commissioned in 1979 upon graduation from Kansas State University and also graduated from the University of Kansas School of Law in 1982. He served as a scout platoon leader in the 2/137th Infantry Bn (Mech), 69th Brigade, in the Kansas Army National Guard. He was a distinguished graduate of the Armor Officer Basic Course. He served as support platoon leader, troop executive officer, S4, and troop commander with 1st Squadron, 11th ACR. He is currently troop commander of HHT, 4th Squadron, 11th ACR.

Cavalry troopers from Fort Knox demonstrate their equipment at the New York World's Fair in 1939. For many civilians, this was their first look at the new force and its tanks and motorcycles.

The Ten Lean Years

From the Mechanized Force (1930) to the Armored Force (1940)

by Major General Robert W. Grow, USA, Retired

(Ed. Note: This is the fourth and final part of a serial on the evolution of mechanization within the United States Army.)

In June 1936, I was assigned to the Supply and Budget Section of the Office of the Chief of Cavalry, a post which I would hold for four years. During my tour with the Chief of Cavalry, there was an undercurrent which came to the surface very briefly from time to time – a fundamental issue – which could be stated several ways but always boiled down to the question of whether or not Cavalry could, or would, furnish our Army's mobile mechanized combat units. Van Voorhis, Chaffee, and others pushed for the creation of an independent armored force. In my effort to be loyal to Cavalry and in the sincere belief that only Cavalry was capable of carrying out the role, I took every opportunity to urge the Chief of Cavalry to grasp mechanization as the only way, not only

Aerial photo taken in July 1939 reflects the emerging shape of modern Fort Knox. Housing is completed along Fourth and Fifth Avenues, foreground, and new brick barracks are being built for 13th Cav. and 68th FA.

to save our arm, but to give the Army its badly needed mobile combat forces.

On my first day in my new post, a conference on combat vehicles was held with my predecessor, Colonel Charles Scott, and Bruce Palmer, who flew in from Fort Knox. I was encouraged to find that their ideas on the military characteristics of combat vehicles coincided almost exactly with what we had proposed three, four, and even five years before. The next day we drove to Aberdeen to look over automotive equipment. We were decidedly unimpressed by the two-man tank, the T3, which we thought had no tactical value for cavalry.

At this stage we were still favorably inclined toward motorcycles. This feeling persisted through 1940, until the advent of the quarter-ton truck. One of my first actions was to expedite delivery of thirty-three of them to Fort Knox. In July, the Chief of Cavalry directed that the new cavalry division organization include a squadron of two armored car troops and a motorcycle troop. Another interesting piece of equipment arriving at Fort Knox at the same time were football helmets, the forerunner of continuing helmet development.

Research and development issues and budget debates occupied much of my time. The Ordnance Committee, with representatives of all branches, met weekly. At the 23 July meeting, a project to build a new experimental tank was approved. The infantry requested more armor and were willing to accept less speed. That proposition sounded correct to me, since the infantry needed an infantry, not a cavalry, weapon. Later that day, Adna Chaffee, who worked in the War Department Budget Section, showed me the 1938 budget in which new mechanized equipment was authorized, but no replacements were provided. The next year, I was alert to see that a regular replacement program, on a percentage basis, was funded.

The horse-mechanized confrontation continued to crop up with ever-increasing regularity. On 29 July 1936 I noted in my diary.

Lininger (the new Assistant Commandant at Fort Riley) flew in for a conference with the Chief... He was told to coordinate all mechanized problems with Knox...

Sooner or later we must come to a showdown on a mechanized school. I recommended a school at Knox, with officers sent there for four years, the first year at school. But Riley

must teach tactics, too. Later I was to change my mind, fearing that a separate school at Fort Knox would only widen the split and bring about the loss of mechanization in the cavalry arm. I always favored a school at Fort Knox, but not an independent service school.

In August 1936, I attended the Fort Knox - Michigan maneuvers. It was my first visit back to Knox in two years. I had a fine reunion with many old friends and even had the opportunity to look over the new gold vault then under construction. The exercises started on 5 August with the largest assemblage of fighting vehicles ever made in the United States. The forces assembled near Elizabethtown included the 1st Cavalry (Mechanized), 201st Infantry (Motorized), the 68th FA, and the 19th FA. Some of the notes I recorded in my diary include:

Impressions: Combat cars cannot operate with closed ports. What to do? Half-tracks did well but due to wheels they are not fast across country. We cannot afford full track.

Four times the advance guard was met by surprise fire and each time piled up on its head, placing all half-tracks under fire while still mounted...Half-tracks are too fragile.

Part of my time at Fort Knox was also spent in researching equipment needs for the units there.

There were many conferences on equipment, radio, and vehicular design prior to the march to Michigan, which began on 11 August. After many conferences with Palmer and Scott, our report recommended a modified scout car (M2) be provided to the 13th Cavalry for the reconnaissance troop, machine gun troop, command vehicles, and possibly for use as a mortar mount. This recommendation did away with armored cars and, temporarily, with half-tracks. We also recommended some thirty-odd modifications to the M1 combat car.

The Michigan "Allegan" maneuvers were confined largely to roads and I did not consider them particularly valuable to us, except as an equipment testing ground. I was greatly disturbed that the mechanized cavalry was continually broken up and used piecemeal, instead of as a coordinated force in the attack. *"What will people think Cavalry is good for?"* I wrote in my diary. *"Apparently delay and harassing only."* The critique after the maneuvers also pointed out the lack of antitank guns in our current organization.

The 13th Cavalry was reassigned to Fort Knox and the 7th Cavalry Brigade (Mechanized) and finally arrived from Fort Riley in September, 1936. Brigadier General Van Voorhis reported to Fort Knox and took command of the brigade, which now included the 1st and 13th Cavalry (Mechanized), with the 68th FA attached.

The variety of problems pertaining to mechanization that were handled in our section of the Chief of Cavalry's office during the Fall of 1936 are illustrated by the following notes taken from my diary:

Must try to get cost of armament reduced. For one scout car it is now over $3000, which is entirely too much.

Land mines for Knox to try on old Christies.

Started a project for small bridges by engineers to help Cavalry across 20-30 ft. streams.

A paper to Knox on a device for training gunners and drivers without driving cars all over the reservation.

TAG disapproved our request for reconsideration of the priority schedule on production of combat cars per month so that the 13th would be able to take part in maneuvers next summer.

(After a conference with the G4): If the General Staff wants to argue and fight about each combat car from now on, I guess we will have to conform.

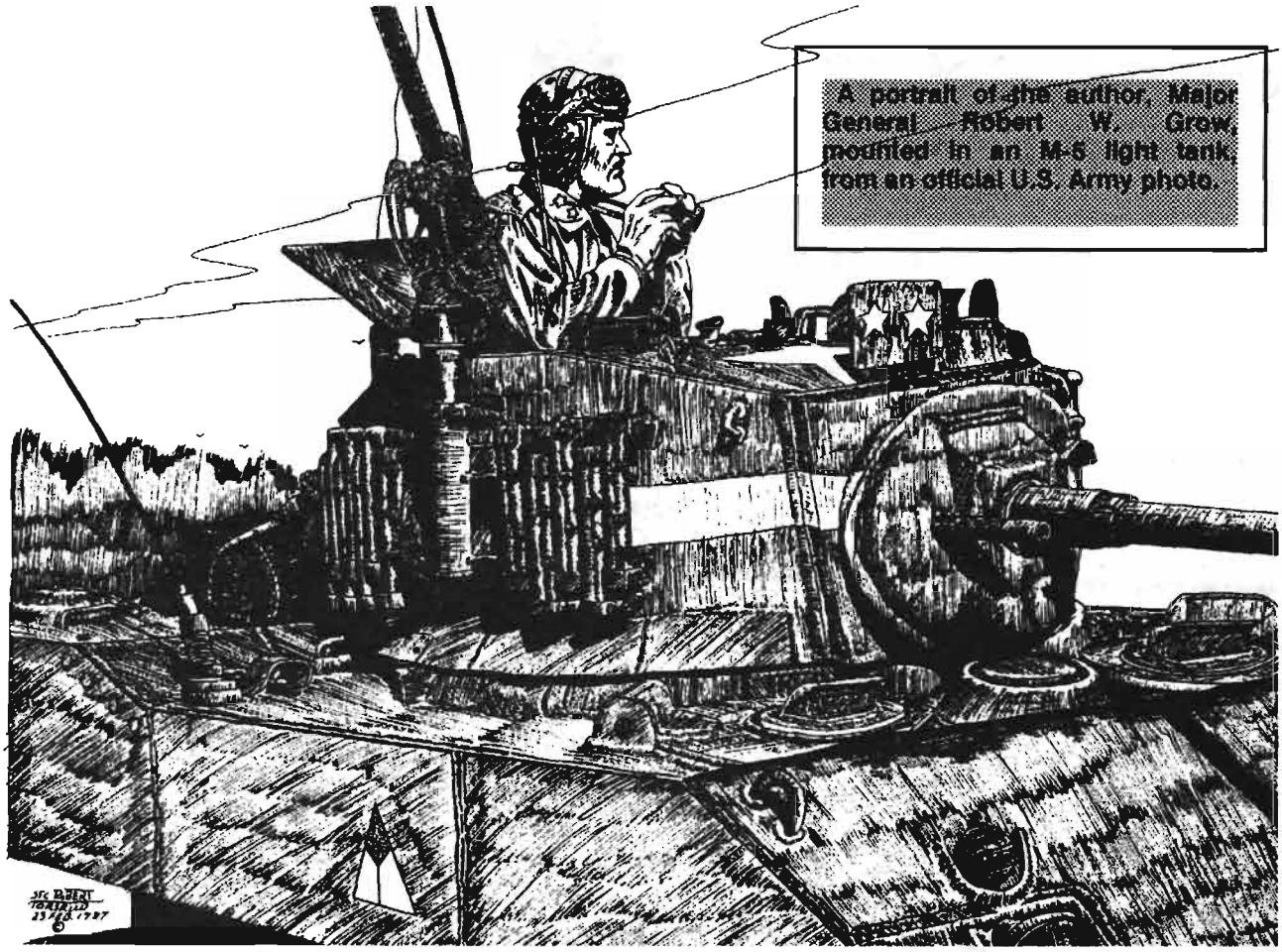
Sent letter to TAG asking for 12-1/2% replacements per year in all combat vehicles starting in FY 1939.

Drafted research program for Ordnance. Principal items: Amphibious and convertible combat car, smoke and grenade dischargers, antitank and antiaircraft guns, light mortar, individual wheel suspension on all wheeled vehicles...

Turned in a memo to the Chief advocating a mechanized division. We have to grab this now or the Cavalry will lose out. (The following day): Gen. Kromer accepted my recommendation for mechanized cavalry division as a starter and is going to write Bliss, Knox and Riley about it.

(On officers for Knox): Kromer expects to give them more officers but

M1 "combat cars" of Troop C, 1st Cavalry, at First Army maneuvers, Plattsburg, N.Y. in August, 1939.



A portrait of the author, Major General Robert W. Grow, mounted in an M-5 light tank, from an official U.S. Army photo.

will be unable to fill them in lieutenant grade. His policy is that all new lieutenants must serve a tour with horse cavalry and take the school course before they go to mechanized cavalry.

These and other issues kept us very busy until the end of the year. On 28 January 1937, General Kromer read us a report from the Cavalry School Board on the desirability of going after a mechanized cavalry division. I was overjoyed with the report, which not only recommended one but *two* mechanized divisions. I recorded in my diary:

They said to begin to talk 'millions', to let the folks on the Hill wake up to a real cavalry requirement... I don't think the present mechanized cavalry can beat the present horse cavalry but it soon can and there is no doubt of the way the wind is blowing. We will breed better iron horses and, in the meantime, we must build for the future of Cavalry.

I was optimistic that the Cavalry Branch was finally riding the wave of the future.

After many meetings with the General Staff on division organization, all components of which had received the concurrence of the several arms and services, we met with General Hughes on 9 April 1937. He read us a memo from General Krueger (War Plans Department) opposing the proposed division on the grounds that "it was too big and too much of a fighting unit, whereas the mission of Cavalry was reconnaissance and security." I was afraid that the committee was going to take the teeth out of the cavalry division. I was more determined than ever, therefore, to push the mechanized division and ask for a commitment to form at least two of them. In a memo to the Executive of the Committee, Colonel Miller, on 19 April, I stated, "The only hope for Cavalry is to get astride the iron horse and dig in our spurs."

In May I attended tests at Aberdeen of German, French, and American antitank guns. There was general agreement that the gun should be 37mm, weigh eight-hundred to one-thousand pounds, with a penetration of one inch at eight-hundred yards. I was surprised that the Infantry did not want more penetration. Our interest in the Cavalry Branch was in mounting the gun on a vehicle. With souped-up ammunition and a forty-five inch barrel, the best penetration we could get with the .50 caliber machine gun at the time was one and one-quarter inches at one-hundred yards. We needed something heavier.

General Van Voorhis had repeatedly expressed his preference for a small two-regiment mechanized cavalry division. When he came to Washington in June 1937 we went round and round on both the division and regimental organiza-

tion. General Kromer supported a three regiment division with stronger regiments, but he could not sway Van Voorhis. Van Voorhis and I were on very close personal terms and finally one evening after dinner at my quarters he told me that my division "was OK, but that Cavalry couldn't handle that much." I thought then, and it was confirmed later, that he sincerely felt that the Cavalry Branch would never accept and really support mechanization and that a separate mechanized force under the War Department would be required.

We constantly studied all the attache reports. I felt that we were way ahead of the French and, in the doctrine of employment, ahead of all except, in some respects, the Germans. Shortage of funds for both development and procurement kept us in a constant struggle with both the General Staff and the services, often for a single vehicle or a few rounds of ammunition for testing. There was progress, however, and equipment was developed and improved. Fortunately, excellent cooperation existed between Fort Knox, Fort Riley, and the supply services, with the Chief of Cavalry's office being the middleman as well as the initiator in many cases.

General Kromer's address to the War College on 29 September 1937 brilliantly expressed the thoughts of our office. It included a strong statement as to the combat mission of cavalry. "Cavalry welcomes mechanization," he stated," and will abandon the horse as fast as machines prove their worth and can be supplied." General DeWitt and Colonel Gruber said that General Kromer "hit the nail on the head" when he stated that as opposed to the European armies of the day, the cavalry of our army was not only designed for combat, but was the only more mobile combat arm. I was quite taken back, therefore, when a few days later I received a study by Colonel Gruber which recommended that a separate mechanized force be established. I felt that any separate mechanized force would result eventually in a separate arm and the consequent loss of the Cavalry Branch. There seems to be no question but that the fate of Cavalry as a combat arm was in jeopardy and that General Kromer realized it and was trying desperately to rally support for mechanization, even at the expense

of horse cavalry, whose advocates stubbornly refused to give up.

There were many conferences on the "Gruber Study" on the development of a separate mechanized force. A revised edition of the study came to the Office of the Chief of Cavalry with a note by General Craig, Chief of Staff, which read in part:

Cavalry and Mechanized Cavalry are entirely different as to tactical employment.

General Kromer sent in a nonconcurrence on the study and took occasion to demand an early decision "on horse and mechanized divisions." Colonel Gruber then sent General Kromer a copy of his proposed War Department policy and doctrine of mechanization. I spent all day preparing comments on it:

I want to emphasize the fact that mechanized cavalry is cavalry and not something foreign to cavalry. His (Colonel Gruber's) memo discounted defensive and holding power while failing to emphasize offensive power – more or less a European or reconnaissance form of Cavalry... drafted a revision which I have little hopes of going through but I firmly believe in it... since the momentous decision was made at Eustis in '31. It is the life line of Cavalry.

Gruber came in each of the two following days and discussed his memo with the whole office. He agreed to change it slightly, making it more palatable to us.

During my two years with General Kromer, who retired on 25 March 1938, I could sense the development of an ever-growing feeling that the problem of mechanization was too big for the Cavalry arm. General Kromer had been won over and possibly could have made the Cavalry Branch the "Mechanized Arm," but he lacked support from the General Staff and from some senior officers in his own branch. His tour expired at a critical time. The next Chief of Cavalry, General Herr, was not as willing to support mechanization at the expense of horse cavalry units. His attitude concerning mechanization was to prove fatal to Cavalry as a branch.

"The next Chief of Cavalry, General Herr, was not as willing to support mechanization at the expense of horse cavalry units..."

Major General John K. Herr was "inaugurated" as the Chief of Cavalry on 26 March 1938. From the beginning, General Herr expressed himself for one Cavalry. It turned out that this meant that he accepted mechanization in Cavalry, but not at the expense of losing or converting any horse units. General Herr brought Major Gilbert Cheves with him from Fort Bliss to be my assistant. It was generally thought in the office that Herr had brought him in to "balance" our office since Cheves had been "indoctrinated" in horse cavalry. It proved to be an idea arrangement as far as I was concerned, for Cheves was very familiar with the horse problems and very sympathetic to mechanization.

"...General Chaffee came to Washington in late November with a complete TO&E for a mechanized cavalry division..."

In April we received a directive from the War Department to prepare TO&Es for use "in planning and instruction" for a mechanized division consisting of a HQ and HQ Troop, Reconnaissance and Support Squadron, a brigade of three mechanized cavalry regiments, and supporting troops. It is interesting to note (1) that the Chief of Cavalry and not Fort Knox was asked to do the job and (2) that it was called a "Mechanized Division" and not a "Cavalry Division." We were also working on a revision of TO&Es for the mechanized cavalry regiment. Without increasing personnel strength, we cut the head and tail, charging the division with distant reconnaissance and supply and thereby increasing the combat strength of the regiment.

General Herr attended the 1st Cavalry Division maneuvers in May and, on his return, approved the TO&Es of the mechanized cavalry division that Karl Bradford and I had worked on. General Herr added that he would like to see the division exist, but that the War Department "would take a single horse soldier away over his dead body." He wanted a mechanized cavalry unit at Fort Riley, but I did not see how he could get it without giving up a horse unit.

The Office of the Chief of Cavalry had little direct contact with Fort Leavenworth, but Lieutenant Colonel R. E. McQuillin, an old Fort Riley friend, had written me several times to help him on organization questions for instruction at the Command and General Staff School. I told him to stop teaching "those funny mechanized divisions" until the War Department put out an official TO&E for one. In the meantime, he could use the brigade that was actually in existence. A week later, I received a letter which stated in part that McQuillin requested that the organization of the mechanized cavalry division developed by the C&GSS be discarded in favor of the one proposed by our office.

On 6 June 1938, the War Department relieved the Commanding General, V Corps Area, of responsibility for the development of mechanized cavalry and restored it to the Chief of Cavalry. This revoked part of the directive of 5 April 1935. The V Corps Area continued to have administrative and operational control of the brigade. This was splendid news to us as it put the development of mechanization strictly under the Chief of Cavalry.

General Herr's attitude in July 1938 is illustrated by two entries from my diary:

The Chief wants to reopen the question of the saber, which was abolished in 1934... 'Will line up the necessary directive to the Cavalry Board to reopen the requirement and submit military characteristics.

Conference with Herr, Crittenberger and Bradford on the mechanized cavalry division... Herr wants a mechanized division, but he doesn't want to pay for it by converting any horse units. He will have to... He wants only one school – hence he wants mechanized cavalry at Riley... It's all still in the air.

General Herr's speech to the War College on 19 September 1938, however, was more accommodating. He emphasized: (1) that cavalry must be used in mass; (2) that reconnaissance is a secondary mission, but that it was necessary to have reconnaissance squadrons at division and corps level; (3) that horse units and mechanized units are complementary and should be used together; and (4) that in strategic reconnaissance, mechanized cavalry should be in the cavalry reserve, except for its own reconnaissance elements. The speech went over well.

Summarizing our projects in the fall of 1938, there were a list of horse needs, then a progressive program for the Cavalry Branch to include the organization of a cavalry corps of three horse and one mechanized divisions, replacement personnel carriers for the 1st Cavalry (Mechanized), and improvements or redesign of the combat car for 1940. Van Voorhis was promoted to major general and given command of the V Corps area on 1 October 1938. Adna Chaffee was promoted to brigadier general and given command of the 7th Cavalry Brigade (Mechanized) at Fort Knox. Van Voorhis and Chaffee steadfastly opposed the transfer of mechanized units to Fort Riley. General Herr, after observing the maneuvers of the 7th Cavalry Brigade (Mechanized) that fall at Fort Riley, told me that he definitely wanted a combat car squadron at Fort Riley.

On 7 October General Herr and I had a long conference with the G3 Department (Generals Beck, Gruber, Grimes, and Ingels) on the proposed mechanized cavalry division, the proposed mechanized squadron at Fort Riley and related problems. All the cards were put on the table as both parties talked freely about their concerns. The G3 agreed to take prompt action on the mechanized cavalry division. This conference was followed by a trip with Herr, Bradford, and Cheves to Aberdeen for more vehicle and weapons demonstrations. I recommended that we get a troop of convertible combat cars in 1940 to keep the idea alive and to develop it.

General Chaffee came to Washington in late November with a complete TO&E for a mechanized cavalry division. It was similar to the TO&E proposed by Van Voorhis, but perhaps a little better. Chaffee proposed three combat car squadrons of two troops each in the mechanized regiments. I did not think the TO&E was as sound tactically as the one we made up the previous winter, but I raised no objections since it was better than the

MG George S. Patton, at left, commanding the 2d AD, confers with then-LTC Grow during maneuvers at Manchester, Tennessee, in 1941.

TO&E that we had at the moment.

As 1939 opened, it was apparent that the Army was due for augmentation. On 5 January, Harmon of G4 told me:

The Chief should put in a letter asking for expansion of the 7th Cavalry Brigade to a division at once, not await approval of TO&Es... the whole thing is in a muddle now due to personal requests by Van Voorhis and Chaffee to the Chief of Staff.

Following this conversation I drafted a short letter to TAG asking for approval of expansion of the 7th Cavalry Brigade (Mechanized) to a division. Crittenberger told Herr that this was not necessary, that "the Staff has all it needs and will give us what we want." Maybe so, but at this time, there was not one cent for mechanized cavalry in any program. Cheves had worked up comparative initial equipment costs as of 1938, which showed a mechanized cavalry regiment to cost $2,112,000 and a horse regiment $394,000. Unless the mechanized cavalry division project was approved on paper, we would never get the money we needed to complete it.

A month later, Harmon called me to tell me that we could put in our request for equipment for the mechanized cavalry division for FY 1941. I replied:

Where are the men coming from? Herr won't agree to converting and there is no chance to get them from outside the Cavalry... He can get equipment for a mechanized division and a regiment at Riley... but he can't get more men... We must go ahead with mechanization or we stand still, which is a step backwards... The decision must be made soon.

Time was running out. If we did not make a decision to support a mechanized cavalry division from our existing assets soon, the decision would be made by someone else. On 25 February 1939, the Chief of Cavalry approved the plan to include the mechanized division in estimates for FY 1941.

One of the questions that kept coming up was whether the mechanized cavalry school should be kept separate at Fort Knox or whether it should be kept as a part of the Cavalry School at Fort Riley. I held the view that we should support only one Cavalry School, which should not be a horse school but a cavalry school. To this end, there must be mechanized school troops at Fort Riley as well as a mechanized cavalry division at Fort Knox. Both Van Voorhis and Chaffee, however, opposed mechanized schooling at Fort Riley. Since both were my very close friends from the earliest days of the Mechanized Force at Fort Eustis, it was apparent to me from many private discussions (although never positively stated in so many words) that they were convinced that the Cavalry Arm (more specifically the Chief of Cavalry) could not, or would not, support the massive expansion of mechanization that events in Europe indicated we would need. The situation continued to become more critical until the final break in June 1940. In the spring of 1939, however, there was still time for Cavalry to save itself.

The time was ripe for the Chief of Cavalry to take action to form a mechanized division. I met Bennie Grimes on the bridle path at the end of April and he told me that "the G3 is raring to go on the mechanized division if Herr will only get in his recommendations." The tentative directive for FY 1941 came out on 2 May. It included the expansion of the 7th Cavalry Brigade (Mechanized), but the Chief of Staff disapproved this action on 14 May. Any expansion was to take the form of another brigade. The Rearmament and Reequipment Program for FY 1941 came through officially on 5 July 1939. We got everything we asked for, an almost unprecedented action.

I took a trip to Fort Knox in July. Chaffee told me that if the Chief of Cavalry could not get personnel for mechanized expansion, he would take steps to force some conversions. He took me on a tour of the

post, and it was amazing to see the transformation that had taken place since I first saw the place in 1930. During the visit I also had a long talk with Mr. Jones, engineer of the White Company, on our need for a half-track with certain characteristics. He promised to go to work on the project at once. The eventual result of this conversation was the half-track used by the Armored Force in WWII. In a final talk with General Chaffee before I left Fort Knox, he frankly stated that he was going to have a division and was going to get the necessary men, even if they had to come from horse units. He was going to have General Marshall (Chief of Staff designate) visit Fort Knox after the Plattsburg maneuvers and "go to the mat with him."

A few days after my return from Fort Knox, General Herr told me that he was willing to take sufficient personnel from the 2d Cavalry to create a mechanized cavalry squadron at Fort Riley. Heretofore, he had stood firm on his vow not to give up a single horse soldier. "*I believe this day can be marked as the beginning of the mechanization of Johnny Herr,*" I wrote in my diary that evening.

The effect of the German invasion of Poland was showing up by mid-September. I recorded in my diary:

I think the Chief should jump on the mechanized band wagon with both feet...the Chief will not reverse his stand on horse units and offer to convert any unless he can get more horses, consequently we get nothing... I will not be surprised to see a movement to take mechanization away from Cavalry.

The Chief's lecture to the War College on 19 September 1939, however, indicated his readiness to expand mechanization. The class was with him and asked more questions than I had ever heard at the College. General Herr indicated that there was no conflict between horse and mechanized cavalry. He emphasized that the German mechanization in Poland was purely cavalry and could be carried out by our mechanized cavalry.

Confirming his War College lecture, General Herr told me on 21 September that he is going all the way in mechanization as being the best thing for Cavalry. He wants one and, if possible, two "Panzer" divisions organized "vertically" instead of our current organization. He feels the time is ripe now to definitely nail down mechanization for Cavalry... The Chief has finally gone all the way over to mechanization. When he went, he went fast. He is afraid of Chaffee, afraid Chaffee will take advantage of the looked-for expansion of mechanization to go for a separate corps. He has asked for Chaffee to come here next week for a conference – to get together and keep all mechanization in Cavalry.

It was much too late!

General Chaffee gave his War College lecture on 29 September 1939. I recorded in my diary:

He gave the best exposition on mechanized cavalry I have heard. He said it was Cavalry and not Infantry, although he did not go so far as to say that it should not be a separate arm. He said it should be expanded to four mechanized cavalry divisions; that regular army cavalry officers should lead it with National Guard and ORC taking over the horse cavalry (or what is left of it). He didn't mince any words as to what he thought of mechanized versus horse. He did not mention any conversion in exact words, but he left no doubt that he meant we should convert our regular cavalry and depend on the National Guard for horse units.

Chaffee followed up with a letter to TAG, through the V Corps Area, and referred to our office for comment. The letter recommended the mechanization of all regular cavalry, except a small nucleus, and relying on the National Guard and Reseves for horse units. Van Voorhis endorsed the letter. General Herr asked me to draft our endorsement. I fully agreed to the plan to expand mechanization, but not to take it away from the Chief of Cavalry, which could only result in a separate Arm. This was the most open and bitter difference that had come up between the Chief of Cavalry and Fort Knox.

There was no doubt in my mind at this time that a separation of mechanization from Cavalry was in the cards. General Herr put in a memo to the Chief of Staff asking for four "Panzer" divisions. I agreed, except for Chaffee's plan to train all cadres at Fort Knox. In that case, we would have two cavalry schools, and one of them would not be under the Chief of Cavalry. I considered that point vital. It was a strong entering wedge for a separate arm. The Chief overruled me.

General Herr met with General Lynch, the Chief of Infantry, on 17 October 1939. General Lynch stated that he did not want any "Panzer" divisions, although he was having trouble with his tank people on that point. Herr suggested that Cavalry take everything under ten tons and Infantry everything over ten tons. I agreed, except as to fixing an inelastic weight limit. This conversation left the way open, however, for Cavalry to become the driving force behind mechanization.

On 10 November Fort Knox reported unfavorably on the convertible combat car T7 and I recommended that Ordnance drop the project for a convertible. The most important radio conference we ever held began at Fort Knox on 13 November with representatives of Cavalry, Infantry, Field Artillery, Signal Corps, the G4, and others in attendance. For the first time we had a demonstration of frequency modulation (FM) radio. Demonstrations, a field exercise, and conferences lasted five days and resulted in agreement on basic principles, requirements, and characteristics. Our findings were reflected in the radios used by the Army during WWII.

Secretary of War Henry L. Stimson reviews the 2d Bn, 1st Armored Regiment at Fort Knox, September, 1941.

My first talk with the Chief of Cavalry on mechanization in 1940 was a disappointment. General Herr did not want another horseman to be dismounted. He was to be disappointed, however, for in late March plans were announced for the 14th Cavalry at Des Moines to be broken up and converted to mechanized cavalry at Fort Knox and Fort Riley. This was a blow to the Chief who had been ignored by General Marshall when the decision was made.

Germany's invasion of Holland, Belgium, and France on 10 May 1940 had immediate repercussions. I noted in my diary:

Business is picking up. Looks like Congress is going to set up more money for equipment so the great general staff is all in a dither. Our recommendations have long since been in, but of course we have to repeat them. Apparently they can never find anything in the file.

(14 May) The President submitted an emergency defense bill to Congress today... I took the bull by the horns on decisions (the Chief was away) and agreed to the modernization program... Invitations are to go out right away. Enough for the whole Protective Mobilization Plan.

All we needed now were personnel to man the new mechanized formations.

I said goodbye to General Herr on 25 May 1940 and had a long talk with him. He told me that he had put in a memo to the Chief of Staff asking for the 1st Cavalry Division at full strength, two corps cavalry regiments, and two mechanized cavalry brigades. For the latter he agreed to sacrifice the rest of the horse units, retaining only enough to fill up the 1st Cavalry Division. In this way, the 11th and 14th Cavalry Regiments would be mechanized. I felt this was the best move he had made since he had been in office, but unfortunately it was much too late.

In late May, I left Washington on a thirty-day leave and traveled to San Francisco by way of western Canada. I was completely out of touch with events. As I was about to drive my car on board a transport ship at Fort Mason on 26 June 1940, however, a radio message arrived cancelling my orders. I wired Cheves for information. His reply stated that I would probably go to Mechanization Headquarters at Fort Knox or Fort Benning. "*It looks like the separate mechanized force boys have won the day,*" I noted in my diary.

The "Ten Lean Years" had come to an end. The Armored Force had been created, not because a new arm was necessary, but because Cavalry did not grasp the opportunities that were available. The Chief of Cavalry did not submit the memo he had shown to me on 25 May, in which he agreed to convert horse units to mechanized cavalry. Instead, he staunchly refused to give up a horse unit. So he lost it all.

The new force was still mechanized cavalry, so our ten years of work had not been wasted. But it had a new name – Armored Force – and a new Chief: Adna Chaffee.

Editor's Note: The many personal stories included in "The Ten Lean Years" resulted from the author's extensive use of his diary as a primary source document.

MAJOR GENERAL ROBERT W. GROW, whose career began as a horse cavalryman, became one of the pioneers in the mechanization of the U.S. Army. He was the first S3 of the Mechanized Force under Chaffee and Van Voorhis in the early 1930s and later commanded the 6th Armored Division in the European Theater during WWII. He retired as a major general in 1953 after serving as military attache in Moscow during the postwar years. General Grow died in November, 1985.

Captain Peter R. Mansoor and Kathy Cast Garth helped to prepare "The Ten Lean Years" manuscript for publication.

Teamwork and Synchronization: The "Blitzkrieg" of the 80's

by Lieutenant Colonel Alan G. Vitters

"The goal of TACTICS is to create TEAMWORK that reduces the effects of fear on the battlefield."
-Ardant DuPicq

In World War II, the German Army developed and employed one of the most potent tactical operational concepts ever seen – the blitzkrieg. Blitzkrieg tactics were characterized by the rapid concentration of forces at a single point, a penetration of enemy defenses, and then a swift and deep exploitation into the enemy's rear, employing all means of maneuver and firepower. It was an extremely effective tactic, under World War II battlefield conditions, and almost contributed to an Axis victory in the war.

Today, an equally powerful operational concept is being developed – synchronization, a key ingredient of AirLand Battle doctrine. Today's battlefield is characterized by tremendous speed, weapons lethality, and complexity. The doctrine developed to fight on that battlefield is AirLand Battle doctrine which calls for offensive spirit and maneuver, fighting a deep, close, and rear battle, and coordination of effort at all tactical levels, and between all services, particularly the Army and the Air Force. AirLand Battle tenets are defined as agility, initiative, flexibility, and synchronization. Synchronization might be described as the ability to integrate all means of combat power and direct it toward a clear purpose. In order to have effective synchronization on the battlefield, there must be effective fighting teams. Synchronization is a by-product of teamwork and leaders build, and lead teams. The key to combat effectiveness is the ability to synchronize all the components of the combined arms. The key to synchronization is the ability to develop teamwork within a unit. How to do that, and what the payoffs are, is the subject of this article.

Characteristics of Effective Teams

In an excellent paper entitled *"Building a Winner - On Practice Field and Training Field,"* Captain Richard Priehm and Mr. Jim Myers (Dallas Cowboys) identified some of the elements of teamwork:

- **Clear Goals.** Someone once said "if you don't know where you're going, any road will get you there." All units need to have direction and focus. A rotation to the National Training Center (NTC) at Fort Irwin, where one of the goals is to defeat the OPFOR, can provide a common goal for everyone to aim toward.

- **Pick Winners and Stick With 'Em.** In his article *"Leadership: Tapping the Sources of Power,"* LTG (Ret.) John F. Forrest writes that the secret of Charlemagne's success in running his empire was the existence of "paladins," 12 special knights who had been personally selected and trained to create order out of disorder. Commanders need to select winners, clarify responsibilities and expectations, build "habitual relationships" with key staff personnel (i.e., the engineer platoon leader, fire support officer, chaplain, etc.), and work and train all of them as a team. Then, they need to support them.

- **Set and Maintain High Standards.** The Dallas Cowboys expect discipline in summer training and they fine players who don't follow the rules. Commanders need to evaluate soldiers on their individual performance, as on the SQT, and set high standards for such things as preparation of fighting positions, range cards, and personal/vehicle camouflage.

- **Emphasize Physical Conditioning.** Some Task Forces at the NTC "run out of steam" in conducting ground operations. Sometimes it's due to temperatures over 100 degrees and high-levels of MOPP. Sometimes it's due to poor physical conditioning. Soldiers in combat need to be alert, aggressive, and self-confident. They develop fit bodies through diet and regular exercise. They develop esprit and confidence through "spirit training" (i.e. hand-to-hand drills, bayonet, and pugil stick training) and from challenging leadership courses like the obstacle, confidence, and leader's reaction courses.

- **Talk and Act Like Winners.** To help motivate cadets, the walls of the West Point gym are filled with sayings like "When the going gets tough, the tough get going." Some coaches, like Tom Landry, portray a confident "leader image." In addition to confidence, there's a place for humor in commanders' personalities. Humor helps to reduce tension in stressful situations and to limit the negative consequences of

battle fatigue.

In their classic book, **In Search of Excellence,** Peters and Waterman described some additional characteristics of effective teams.

● **Stick to the Knitting.** Tough, realistic training develops soldiers who are confident and competent. Units going to the NTC emphasize drills, PMCS, MILES proficiency, and always, land navigation techniques. Units need to have opportunities and resources, like money and time, to conduct situational training exercises, ARTEPs, CALFEXs, and gunnery.

● **They Communicate.** According to Brigadier General Gordon R. Sullivan, "the ability to effectively process information is, and always has been, the key ingredient of effective fighting units." Commanders need to communicate well - up, down, and laterally. Good units are marked by lots of informal, candid information exchanges. One Army TOC uses a whistle to assemble key personnel when critical information needs to be disseminated immediately.

● **Power From Rank and File.** All soldiers need to feel like winners. They need to be treated with dignity and respect - from cadet/private to general. Effective units are constantly seeking ways to reward their good soldiers. In turn, superiors get loyalty and respect. It's an exchange process and subordinates have a key role to play in leadership by helping leaders to succeed.

● **Breed Champions.** Commanders need to encourage innovation and let their subordinates experiment. There is no success without failure and subordinates need the freedom to fail or, is it put more aptly as the freedom to learn?

● **Like Action.** Teams that are successful are "action-oriented." They like to go out and try things – but they don't try to fix what's not broken.

● **Live by the Spirit and Letter of Belief.** The Army values tradition. As Tevye in *"Fiddler on the Roof"* says, "tradition gives continuity and meaning to life." Good units know what things are important and do them regularly. Commanders need to get out of the office to ensure that important activities are, in fact, going on. That's called "MBWA - Management By Walking Around."

Another author who has emphasized the importance of teamwork is Peter Vaill. In his article, *"The Purposing of High Performing Systems,"* Vaill identifies these elements of teams:

● **Social Activities and Operations are Combined.** In these units, talking shop is OK away from the unit. Soldiers like to do things together for the pleasure of each other's company. Informal sessions spring up. People take time to recognize new team members, bid farewell to "old timers," and thereby humanize an environment that is marked by great personnel turbulence.

● **Time is Measured by Key Events.** In these units, people don't talk about next month, but in terms of "after the ARTEP or STX." Duties are not seen as something going-on between 8 AM to 5 PM. It's a 24-hour a day profession.

● **An "US" Attitude.** There's a genuine commitment to sharing in high performing teams – not hoarding. Success is measured in terms of how you contribute to making other team members succeed, and the team win. Competition that creates winners and losers is deemphasized in favor of activities where all win. Statistics aren't used to create a competitive environment between units on "duty" issues. Athletic team competition, however, has a place.

● **Personal Relationship of Equipment and Men.** It's been said that maintenance in the Army got worse when the last horses went off active duty. Cavalrymen used to care about their horses, but it's hard to develop an "attachment" for an M3. To develop a sense of attachment to inanimate machines, some units let their troops name their tracks/tanks.

How To Develop Effective Teams

It's one thing to be aware of some of the characteristics of effective teams, and another thing to be able

to develop effective teams. Some of the key factors in developing effective teams are carefully selecting individuals with the skills, characteristics, and attributes to lead; employing training events – particularly leader training – to mold units out of individuals; and ensuring that the whole team is involved in the significant activities of the command.

The effective AirLand Battle leader must be an effective team builder. He combines the best attributes of teaching and coaching as a mentor. In their article, "*Leaders as Mentors,*" LTG Charles W. Bagnal, Earl C. Pence, and LTC Thomas N. Meriwether write that mentoring is a "leadership style" which is characterized by "open communications with subordinates, role modeling of appropriate values, the effective use of counseling for subordinate development, and sharing of the leader's frame of reference with subordinate leaders." AirLand Battle leaders need to be capable of sharing a vision with their subordinates, and helping that vision to take form by creating an environment and establishing a climate of command whereby all members of the team can contribute.

In a letter to the field on "*Mentoring,*" General John A. Wickham Jr., the Chief of Staff, wrote that "mentoring is a key way in which we exercise leadership and strengthen Army values. Giving of ourselves by sharing our knowledge and experience is the most important legacy we can leave to those who follow." One way teams can be developed, then, is by leaders consciously applying a "mentoring style" in their relationships with their subordinates. In addition to the presence of a mentoring leader, teamwork can also be developed through training.

One of the best ways to promote teamwork in a unit is to conduct leader training and officer professional development sessions on a regular basis. Some of the best leader training methods are use of terrain boards and sand tables, simulation exercises, TEWTS, and coordination exercises.

The highly professional German Army of the '40s made extensive use of terrain boards to develop a technique called "*auftragstaktik.*" Briefly stated, this referred to a condition which could be developed in a tactical unit whereby subordinates learned to operate in a manner consistent with their superior's intent, even when operational orders couldn't be conveyed. Through wargaming on boards and sand tables, many of the operational lessons of war can be practiced, simulated, and learned.

High-tech simulation devices are greatly enhancing the ability of the Army to replicate the reality of combat operations. Simulations such as First Battle, CAMMS, and ARTBASS can be used, and wargames played, that not only enhance tactical performance, awareness, and competence, but serve to build teams and develop teamwork.

Coordination exercises, like the fire (FCX), logistics (LCX), and movement coordination (MCX) exercises dscribed in doctrinal training literature, can be an efficient means, at low cost, to enhance coordination between command and staff personnel. In addition, the lessons learned in integrating direct and indirect fires in a FCX, logistical assets and resources in an LCX, and various movement techniques and methods in an MCX contribute to an ability to synchronize elements of any nature in fighting on the modern battlefield.

To develop effective teams, leaders should ensure that they involve the "whole" team. Wives and family members are a critical part of that team and special events can be planned to enhance family members' awareness of the unit and its mission. Pre-deployment briefings are a good way to convey information to family members prior to off-post deployments or rotations to major training areas. Besides family members, National Guard, Reserve units, and host-nation "partnerships" (or affiliations) often exist and these units can contribute to, or be a part of the "whole team." Active Army units that train at the NTC often have the chance to augment their personnel strength by deploying with Guard or Reserve soldiers.

The Payoff of Teamwork

The real payoff of teamwork can best be seen in its effects on unit discipline, morale, and actual warfighting ability.

At the National Training Center at Fort Irwin, experienced observer-controllers have noted that the most important quality distinguishing task forces which perform exceedingly well from others is discipline. General Cavazos once described discipline as "the ability of a soldier to do what was expected of him – even in the absence of superiors or orders." Discipline in combat is demonstrated in many ways - being awake or alert on security, timeliness in conducting missions, performing operations safely, and responsiveness to orders.

Units that train and fight well often have high morale. Soldiers know that their chain of command cares about them, will listen to their concerns (within the constraints of time), and know that what they contribute to the unit mission is regarded as important.

Last, and most important, units that demonstrate high levels of teamwork on, and off the battlefield, WIN. They are able to accomplish more in less time, and are able to capitalize on their ability to get a synergistic effect from their joint cooperation. Proper integra-

tion and coordination (synchronization) of all of the elements of the combined arms team creates a condition where the sum is greater than the addition of its individual parts. That means units can fight outnumbered - and WIN.

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LIEUTENANT COLONEL ALAN G. VITTERS was commissioned in Infantry from the USMA in 1968. He served with the Americal Division in the RVN and the 3d Infantry at Fort Myer, VA, before returning to West Point to teach leadership. At Fort Knox, was a division chief in the Command and Staff Dept. and battalion commander of 4-54 Inf. A graduate of the C&GS College and the Army War College, he is due to be assigned to the doctrine division of the Infantry school.

THE DRIVER'S SEAT (continued from Page 8)

Leadership Development

However, we must ensure that training carries over to the tactical organizations for continued leader development and increased unit proficiency.

The big task for true leader development is being able to put it all together. How do you require an NCO to train his soldiers and himself? You do it by making the Skill Level 3 task the primary task for training and then integrating Skill Level 2, Skill Level 1, and common tasks throughout the training.

Skill Level 3 tasks, and higher, are actually mission tasks. Each task requires an NCO to train soldiers on a particular piece of equipment. Each task begins with the words"perform," or "direct,", or "supervise." So the task title already identifies the resources required. The only areas the trainer has to figure out are the common and individual tasks needed to support the Skill Level 3 task and the time needed to support it. That should not be too difficult. Remember when we constructed practice SQT tests in the units?

All you need to do is sit the platoon sergeants down in a locked room with the MOS Soldiers Manuals and the Common Task Manual. Take a Skill Level 3 task, "Direct Main Gun Engagements on a M1/M1A1 Tank," and determine the Skill Level 2, Skill Level 1, and common task associated with the task. Now you have your training requirements. All you need to do is provide the time – time for training which includes PMCS, task training and evaluation, during-action and after-action reviews, and retraining, if required. That's not a one-hour or two-hour block, but look what you gain: Competent crews who train and work together. Shortly, they will become 85-90 percent totally proficient so that most of your training time can be spent training leadership in a technical and tactical environment. CTT, SQT, and Table VIII become a piece of cake.

There are two other NCOs who play major roles in leader development. Regardless of all the directives put out by all the organizations, leader development can only happen at the battalion/squadron, company/troop level, where the command sergeant major and first sergeant are key. They must be competent trainers and knowledgeable in the areas for which the organizations are responsible. They must be sensitive to the needs of the organization, advise the commander, and be the the senior enlisted trainer for the organization.

Many times you hear the comments, "We fire Table VIII next week" or "We have our ARTEP next week." However, the role of the senior enlisted trainer of that organization started weeks ago in preparation for those exercises. He knows the strong and weak areas of the companies. Wrapped up inside of him is a data bank of lessons learned. He should be able to foresee problem areas and neutralize or eliminate them before they appear. He should know the leadership challenges and has developed a program in preparation for those challenges. He knows when to peak, how to get a unit fired up, how to keep them on their toes, and how to take them out and bring them back safely. He has been through it many times.

If the CSM and lSG are not organization- and mission-proficient, the commander does not have the senior enlisted advisor trainer needed. The NCO leaders of the organization do not receive the leadership development needed to perform beyond the common task level. In our Army of today and tomorrow, with its new equipment and its excellent soldiers, leadership development must start at the senior NCO level.

Professional Thoughts

Defeating the Mi-24 HIND Will Require a Team Effort

Introduction

Colonel Erik Albertsson, Swedish Army (Retired), specialized in anti-air defense throughout most of his career. He spent 12 months in the United States attending US Army formal schools at the Missile Command, Redstone Arsenal, Alabama, and Air Defense Center, Fort Bliss, Texas, for advanced training on the Hawk missile air defense system. Colonel Albertsson led the Swedish Army's study team for future air defense developments and strategy. These studies led to the development of the Bofors antiair missile, RBS 70, Ericsson's radar system, PS 70, and the Swedish modifications to the Hawk missile system. As a result of these studies and his experience as the commander of the air defense regiment in northern Sweden, he has unique qualifications in this tactical area, which is receiving increased attention by all armed forces.

First of all, I would like to congratulate Captain Carter Myers for his very interesting article in ARMOR, March-April 1987—"The MI-24 HIND, A Potent Adversary." I agree with almost the entire article, so my comments are offered to provide some insights from my experience in employing anti-air weapons and training the troops who man them. I will comment in particular on the air defense capabilities of small arms and guns with other primary missions.

Captain Myers has correctly identified the MI-24 Hind attack helicopter as a powerful and very dangerous enemy to ground units. Not only because of its heavy armor, large ordnance load and long time on station, but also for its ability to transport highly trained rangers, Spetsnaz, to choke points. The newly introduced Havoc antiarmor attack helicopter may offer an even greater threat to armor columns. The estimated 1,300 attack helicopters and the threat from the 2,600 close air support aircraft such as the new Frogfoot must be countered by all available air defense assets—both dedicated air defense units and units with other primary missions. The objectives of the units with other primary missions were outlined in Captain Myers' article as:

- Destroy the helicopter.
- Force the helicopter out of your area of operation.
- Force the helicopter to fly higher, so that long-range air defense weapons or Air Force attack aircraft can shoot the aircraft down.
- Spoil the helicopter's aim and/or disrupt his attacking run.

It can be assumed that the Warsaw Pact force will try to carry out its operations by quickly gaining air superiority and using fast moving airmobile and airborne operations to a large extent. These airmobile and airborne operations can be expected to take place far ahead of their main thrusts. No armed force in any country has, or will ever have, enough dedicated air defense units to counter a thrust of airmobile forces able to move freely over a wide operational area. In Sweden, the army employs dedicated missile and gun systems, ranging from the sophisticated Hawk missile, for long-range defense, to the laser-beam-rider missile, Bofors RBS-70, and Bofors 40-mm guns for short-range engagements. However, these units will always be positioned in accordance to priorities which will change rapidly in the highly mobile battlefield with armored helicopters. This mobile battlefield and the hilly terrain of Europe almost guarantee that the operational commander will never have enough dedicated air-defense units within range for protection. The commander must be prepared for self defense, using the assets under his direct command. To increase the air-defense density within the units' operational areas, the Swedish ground forces are trained to fire on and hit aircraft with an All Arms Air Defense (AAAD). From tank crew commanders to infantry soldiers, all are expected to locate, identify, and fire on Threat aircraft in coordination with higher commands and neighboring units.

This means that fire volume from air defense units, guns from tanks or armored vehicles, and small arms can and must always be massed against the air threat. It is better to kill the airborne enemy "twice" than let him kill you or other friendly troops...

...During the initial airmobile and airborne operations, it is always better to kill the aggressor "by dozens", while they are packed in the aircraft, than to fight the elite troops after they are dispersed on the ground!

The Requirement for High Air-Defense Density Using All Weapons

Let us look upon part of the airborne threat against Western defending, delaying and counter-attacking forces in Europe from the non-dedicated air defense weapon crew's point of view. The problem can be summarized by evaluating the engagement ranges and the phases of combat.

The engagement ranges for attack helicopters will be far less than 3 kilometers, because of the visibility and hilly terrain. The ground units will often have concealed avenues of approach and good camouflage. There will be similar limitations in detection capability for aircraft attacking well-disciplined ground units and air-defense weapons sighting terrain-following helicopters. With this close in fighting, all combat arms can play a major role in the following phases:

DEFENSE

- In breakthrough directions, Frogfoot aircraft and Hind helicopters can be launched in massive attacks.
- Airborne attacks on our counter-attacking units using Hind and Frogfoot forces.
- Occupation of choke points by air landings supported by Hind and Frogfoot forces.

DELAYING COMBAT

- Coup-de-main operations in order to outmaneuver the delaying forces. Such operations will be supported by Hind and Frogfoot forces.
- Hind and Frogfoot forces can be used to suppress artillery units supporting the delaying units.
- Counterattacking units can be engaged by Hind and Frogfoot forces because of their high readiness and relatively long time-on-station.

COUNTERATTACK

- Hind and Frogfoot forces will be used to engage the counterattacking units.

As seen from this summary, there will be a lot of high priority airborne targets that can be engaged by combat arms with other primary missions as a complement to the dedicated air defense units. This airborne threat close to the forward edge of the battle area, and to the flanks, will be the most dangerous to the effectiveness of an attacking or defending force.

Implementing the Use Of All Combat Arms For Air Defense

The use of tanks, armored vehicles and small arms to increase air defense density requires new training, command and control techniques and ordnance developments. The command and control requirement can be met by the refinement of current doctrine and coordination techniques, coupled with use of alerting and cueing radar to give warning alarms, including identification/friend or foe. The ordnance developments are available now—antiarmor rounds for small arms and proximity fuzes for 40-mm or larger guns. However, the training required by the commanders and individual gunners may be the most urgent.

In Captain Myers' article, the American employment technique for rapid-fire guns was described as:

"...The primary principle of that doctrine is to put a heavy volume of fire into the path of the helicopters. Pick a point 50 meters in front of the *helicopter and fire continuously into that point as the helicopter flies toward and hopefully into it."*

I do not think that this technique is as effective as training gunners to estimate and apply lead and elevation angles. This technique is well within the learning capability of an average soldier. In Sweden, we teach each individual gunner and crew the technique of leading the helicopter and slow-moving aircraft.

With an automatic rifle, the soldier fires semiautomatic fire, keeping the right lead angle on the target. With a machine gun, the soldier fires burst fire (5-20 shots per burst), adjusting the lead angle between bursts. Gunnery techniques for rapid-fire guns on the armored fighting vehicles are similar. Main guns on tanks are usually employed against hovering helicopters only.

How to Give All Soldiers Proper Aerial Engagement Gunnery Training

As a basic knowledge, everyone is made aware of the airborne threat and what he and his unit can do about it in terms of passive and active air defense measurements.

The use of all weapons—rifles, machine guns, small-caliber cannons, and the main gun on tanks can and must be trained cost effectively. The gunnery skills, fire discipline and coordination are best taught in the field in small unit or large command exercises. Correct techniques are developed and taught to make the most effective use of each round fired.

The Swedish Army has been using eye-safe laser simulators for many years to train anti-air gunners. The use of precision laser simulators has been very effective and can be summarized as follows:

- The training is very effective and realistic.
- The devices provide true ballistic simulation to permit proper lead angle and elevation learning.
- The training can be performed at any place where a target aircraft or drones can fly proper profiles. Target aircraft can range from Piper Cubs to helicopters and supersonic jets. Safety problems are significantly reduced.
- Many soldiers can be trained simultaneously and still get their individual hit results. This means that very important feedback is guaranteed — the soldier feels confident that he has got some means and the ability to strike back!
- The training costs are very low.

This experience of training dedicated air-defense gun crews supports the similar use of these simulators to teach the crews of weapons with other primary missions to accept a secondary but critical role for self defense against the air threat. When looking carefully at the training problem, the laser simulators seem to be a practical and cost effective solution to give all soldiers and their commanders necessary and effective training.

Summary

It is always better to kill the airborne enemy "twice than not at all"; therefore, all combat crews must be prepared to fight the airborne enemy effectively. A total reliance on dedicated air-defense units can be a fatal mistake. With today's highly mobile airborne threat, the attack helicopter operating ahead of the ground forces can often be the highest priority target for all weapons and crews.

Being a necessary complement to dedicated air-defense forces, an effective high density "all arms" air defense also contributes to keeping the soldier's morale high — every soldier must know that he has some means and the ability to fight back! The necessary training to implement an "all arms" air defense — which can mean local air superiority and freedom of action — can be performed without range limitations, realistically and cost effectively by using eye-safe precision laser simulators.

COL. ERIK ALBERTSSON
Swedish Army (Ret.)

The Evolution of a Battalion Commander

by Major Richard P. Geier

The following essay was selected as the winner of the Draper Combat Leadership Trust Fund's essay contest, announced in the September-October issue of ARMOR.

Being a leader is an evolutionary process. Leaders evolve through observation and study of other leaders and, most importantly, through experience in leadership positions. Most leaders have learned their leadership skills at the school of "Hard Knocks" (which is right down the street from the school at Fort Knox). We disciples of leadership all secretly hope that some day our biographers will write that we were natural leaders of men. Hopefully our egos won't grow to the extent that we can't smile at that statement and remember back down the road to being a leader.

Remember when we were children and our teachers would select one of us to be in charge of some class exercise? And remember watching your peers or yourself struggle, sometimes successfully and sometimes not, with positive or negative motivational techniques – techniques that either caused chaos or impelled our classmates to accomplish the task?

Do you remember the informal leaders who arose during those initial leadership exercises? Most often these informal leaders were the extroverted, well dressed, good looking, athletic children who were considered "natural leaders". Do you remember the disastrous results when the informal leaders were a disruptive influence upon your classmates? Did you ever have the rarer experience of seeing the informal leader unselfishly support the selected leader with the resulting successful outcome? Were you one of the many children who were not choosen to lead or not, at that time, "natural leaders"? Did you not watch, listen and file the experience away saying to yourself "When I get a chance to be a leader, I'll get the informal leader on my side and I'll use the leadership techniques that I've seen work and discard the rest."?

"...Do you remember meeting the campus oddball, who you immediately dismissed as a nerd?..."

Remember when we participated in organized athletics and the naturally exuberant individual was slapping everyone on the back, getting us fired up and ready to win for good old Lincoln High? And remember the normally quiet and even meek individual who, due to a lack of physical skills, insecurity or whatever reason, attempted to ape the mannerisms of the inherently enthusiastic individual? Do you remember thinking, "This guy is faking it and he is falling flat on his tail"? Again, did you not watch, listen and say to yourself, "I've got to be myself if I want to be a successful leader."?

Remember when we went to work after high school and later to college and we met people from other parts of the country and other social classes? People who were much different than the relatively narrow group of folks we hung around with in high school. And remember when we began to have the self confidence to be ourselves and not a clone of the group we associated with? Do you remember meeting the campus oddball who you immediately dismissed as a nerd? But as the years went by you realized that while his appearance or manner of speaking was odd, his brain was quick and penetrating. His obvious talent in his field earned him the respect of his peers and as a result, he became a campus leader. Do you remember realizing that competence, talent and respect for others is repaid by peer respect and eventually positions of leadership?

We all remember our first military leadership experience. The tight feeling in our stomach when we reported into ROTC summer camp, OCS or beast barracks. And remember practicing facing movements in front of the mirror, going over Jody cadence in your mind and the way your knees trembled the first time you reported to the TAC officer?

Do you recall the first military leader that you admired? Wasn't he the cocky, self-confident, often funny, bemedaled infantry officer who seemed to possess an intense inner force. He had a force that made you listen and want to be like him. Did you also meet the cadet/candidate who worked his tail off and thus had the knowledge, appearance and bearing of an officer but lacked the humor, the personality, that force that caused men to want to follow him? And did you find in yourself some of the qualities of the dynamic officer and the automaton cadet/candidate?

Did you work to enhance your inner force and suppress your robotic-like qualities?

Then we were commissioned and paid the silver dollar to that seemingly old man, that senior noncommissioned officer who first saluted us. Remember basic course, one of many lieutenants vainly searching for respect and truth from what was presented on the platform and in the field? "Lieutenants, pay close attention to what I'm going to teach you during this period of instruction. For this information will allow you to kill the enemy and save your life and the lives of the fine American soldiers entrusted to your care," barked the sergeant first class. Remember how the impact of that warning waned as each instructor of each different subject gave us his variation of that speech? And remember your impatience for graduation from the basic course and your eagerness to report to your first unit with visions of glory and the desire to impress all with your new found knowledge?

In freshly cleaned class A uniform, calling cards in the right breast pocket, clutching an inch-thick manila envelope crammed with orders already damp with palm perspiration, in spite of the European coolness, you reported into the adjutant of your first battalion. Remember the lack of joy on his face when you clicked your heels and saluted the obviously overworked first lieutenant? "You don't need to salute me or call me sir, greenbean, just sit down and relax until I can figure out where to put you," said the exasperated adjutant. Welcome to the real Army. And do you recall meeting your first company commander, first sergeant and platoon sergeant? Aren't their names and faces indelibly etched into your mind? Did you have a satisfying initial talk with your platoon sergeant or did he give you the "I'll wait and see if your worth a damn, lieutenant, before I open up to you" attitude? And what about your platoon? Didn't you step back and wonder if you had stumbled by mistake onto a Hollywood movie lot where they were shooting a war movie? All the stereotypical characters were present. We had the spoiled rich kid, the mamma's boy, the country boy, the thug, the college kid and the guy from the inner city. But mostly we had the draftees who quietly went about their business and honorably served their time in the Army. Remember the B.S. sessions in the field and the telling of all the lies about the home town, girlfriends, weird friends, personal exploits and the typical, "If you think that's bad, let me tell you about..." one-up-manship?

"...But after watching company commanders for a couple of years, didn't you say to yourself, 'I can do better'?..."

Did you ever challenge your platoon by saying, "They (the Bn/Co commander or whoever) think we are all screwed up. Let's show them what this platoon can do!"? Remember the look of approval from the platoon sergeant and the gleam in the eyes of the platoon members as they went about preparing for the dreaded event? And remember the pride and feeling of satisfaction, the shouts of triumph, the sense of relief as your platoon all qualified on Range 80 Grafenwoehr? Then they moved you out of the platoon and into a battalion staff job. Remember the farewell party, the handshake from the platoon sergeant, the feeling of respect from the first sergeant, and the final "Don't screw it up and don't forget where you came from." from your company commander? Weren't you left with a feeling of sadness but satisfaction?

Did you find the staff job as challenging, but less satisfying, than being a platoon leader? If so, didn't you start to set your sights on company command? Were there not other platoon leaders who were not as successful in their platoons? Remember the lieutenants who found the challenges of staff work more self-fulfilling and the prospect of command more threatening? Was this not the first indication that not all were cut out to be military leaders?

As a staff officer, do you recall watching and evaluating company commanders? Didn't you learn by watching their triumphs and failures? Their independence and the power of their position was evident. "The staff will never say no to a company commander. That is green-tab business," the grey-haired battalion commander said, glaring at the staff. If you didn't feel like a second-class citizen before, you did then. But after watching company commanders for a couple of years, didn't you say to yourself, "I can do better, or at least as well? That company commander's lieutenants fear him. He can't get along with his first sergeant and his NCOs and his troops hate him. The other company commander can't make a decision and can't wait until his command is over so he can go to graduate school. Now, the E company commander is having fun, his soldiers admire and respect him, his NCO's totally support him, he has high standards and his company is the best in the battalion. I want to be a company commander just like him."

The inventory was bewildering, the change of command quick, and as you signed the first morning report the thought crossed your mind, "What now, captain?" Did you slowly gain the repect of your command or did you rapidly demand it? Was your first sergeant a partner in the running of your company or did you shut him out and leave him with

menial police/duty roster responsibilities? Could you share leadership or was your company a one-man show? Did you train your lieutenants or did you let them fail or succeed on their own? Did you enjoy talking to your soldiers, either in a group or individually? Did you stay open and positive in your attitude toward your troopers or did you let the few bad apples cause you to withdraw and be bitter about the quality of your soldiers as a whole? Did you seek to stay in command as long as possible or did you consider command a cross to bear in order to get a better job? More than likely, we left knowing that there is no better job than company command for a leader if the battalion commander allowed us to lead our company. Commanding successfully meant we left command with a unit that was at least as good as it was when we took command.

We also left with a successful leadership style that was uniquely our own: a style demonstrating tactical and technical competence, a style that earns the leader a reputation of being firm but fair, a style that earns the respect of the unit's NCOs, and lastly, a style that creates lieutenants who want to be a company commander just like us.

What of the years after company command? Remember keeping up with our craft in the doldrums of the 3Rs? Reflecting upon our past leadership accomplishments, we, through enthusiasm and force of personality, recruited fine young men, influenced promising ROTC cadets, or caused our reserve components to consider us totally professional military officers.

Now you are a major and, unless you are in SF or aviation, you have no opportunity to command. This may be the time that the lucky ones meet their mentor. A mentor is the person who takes the time and interest to teach us what the Army schools do not. He is the man who instructs us about brigades and divisions, budgets and BTMS, programs and training constraints, tactics and operations. Did you have such a mentor and advisor? Did he allow you to grow within yourself and not attempt to make you his clone? Remember that efficiency report he wrote that said "I would fight to make him one of my battalion commanders"? And remember that first faint glimmer of hope that it might come true?

They promote you and they put you on the battalion command list. Before you know it you are at the pre-command course, quivering with anticipation, impatient with the instructors, and eager to get in command. The day of the change of command arrives, you give your short humble speech, and you sit in your bare new office and think, "What now, colonel?". Then the adjutant drops a letter on your desk. You open it to discover a note from your mentor responding to your invitation to come to the change of command. The letter says,

"As you take command, let me give you two bits of advice:

- Don't change. The Army has selected you for what you have been.

- Your legacy will be the lieutenants you touch. All else is transitory. They will remember you as long as they live.

Good Luck, get hits."

Now it all comes together; your leadership course is clear. You and your leadership style are a function of your environment, values and experience. Remember the leadership lessons learned. Retain the ability to recall what it is like to be a platoon leader, company commander or staff officer. Remember you will be starting some lieutenant's leadership evolution and hopefully, your company commanders want to be a battalion commander just like you.

(Continued From Back Cover)

172d Armor

Campaign Participation Credit

Civil War
Gettysburg
Virginia 1861
Virginia 1862

World War I
Streamer without inscription

World War II
New Guinea
Northern Solomons (with arrowhead)
Luzon (with arrowhead)
Rhineland
Central Europe

Decorations

Philippine Presidential Unit Citation, Streamer embroidered 17 OCTOBER 1944 to 4 JULY 1945 (172d Infantry cited; DA GO 47, 1950)

Headquarters Company, 1st Battalion (St. Albans), additionally entitled to:

Presidential Unit Citation (Army), Streamer embroidered IPO DAM, LUZON (2d Battalion, 172d Infantry, cited; WD GO 90, 1945)

BOOKS

A Heavy Brigade In Vietnam

THE INFANTRY BRIGADE IN COMBAT, by Duquesne A. Wolf, Sunflower Press, Manhattan, KS, 1984. 50 pages. Softcover.

As you finish this excellent monograph, you will see that it deserves a different title. A better title would have been "The Heavy Brigade In Low-Intensity Warfare." The author writes of the operations of the Ist Brigade, 25th Infantry Division, in August 1968, and does so with the authenticity and professional concern that we would expect of the commander of that unit during that period of combat, the Third VC/NVA Offensive of 1968.

COL Wolf's brigade had two mechanized infantry and two regular infantry battalions assigned, along with a tank battalion(-). The operations that he describes provide valuable lessons in fighting with light and heavy forces in a low-intensity environment, and the reader benefits from excellent maps and photographs, as well as succinct writing.

In his description of the battles, COL Wolf illus-trates the many ironies of combat in Vietnam. He cites the instance of clearing rubber trees from the edges of roads to take away cover and concealment from the VC/NVA. However, the clearing teams then stack these same trees only 50 meters from the road, and they make excellent obstacles to off-road movement by US vehicles caught in an ambush.

The author clearly illustrates the irony of Nui Ba Den, the dominant mountain in Tay Ninh Province, that at the same time contained a key U.S. signal facility on its summit and a long-suspected key enemy headquarters on its slopes. Of central importance to military professionals is Chapter V, "Lessons Learned." Here, COL Wolf details the important points that we should take away from the operations of the Ist Brigade, 25th Infantry Division. Of particular interest are his ideas on "fixed" brigades and the desirability of a light tank for low-intensity operations. The battles that he describes clearly show that heavy brigades are effective in close terrain and against purely light forces such as the VC-/NVA.

Additionally, he shows how the mobility of these armor/mechanized forces not only permitted aggressive operations during periods of limited resources, but also contributed to a "flexibility" in the minds of combat leaders and commanders. In this chapter he also emphasizes the absolute necessity of effective, available, high-quantity indirect fire support from field artillery units. This monograph is an excellent appreciation of combat in a low-intensity environment by forces that we now usually do not associate with such a situation. With all of the emphasis on light divisions, the military professional would do well in reading how a heavy brigade fought in Vietnam.

ARMOR Staff
Ft. Knox, KY

TANK, by Ken Tout. Clerkenwell House, London, England. 208 pages, 1985. (No price available).

Tank tells the story of the crew of a Sherman tank during 40 hours of battle in Normandy in August, 1944. It is Mr. Tout's first book and from the preface it seems that the author's intention is to provide a memorial to comrades lost in battle. The battle was largely unrecorded, but was nonetheless a success and of great relevance to him and the people liberated in that part of France. But the book goes very much further than being a memorial. From the first line the reader is taken into the world of a tank crew. Immediately, it comes to life, on one hand the external world dominated by hedgerows, farm buildings, valleys and crests, and on the other the inside world bounded by steel walls and the smells of confined humanity, mixed with machinery. Everything that happens occurs within a few hundred yards of us, and does so in graphic detail.

The author manages to evoke what must be some of the truest and most lifelike images of what it is really like to fight and live in a tank during battle. As it says in the foreword, written by a man who was himself a wartime tank soldier, "If you too have been in such a situation, every line of this book will ring a bell. If not, it will tell you much." But Ken Tout is no ordinary author of war books. Tank is written with a rare blend of poetry, insight, and realism. Tout has somehow managed to write on two levels at the same time: He mixes the innermost thoughts of an intelligent and perceptive tank crewman, subsequently promoted to tank commander in battle, with the rough and ready humor and banter of a tank crew trying to keep themselves together in the face of danger and death. The problems of coping with the constant waiting for something to happen, the fear of what it might be, of maintaining constant vigilance while trying to keep awake, let alone alert, are vividly demonstrated.

To any soldier trying to prepare himself or others for any future conflict, there is very little that training can do to prepare for the reality of battle. Yet studies show that knowledge of the unknown plays a key part in facing it. One way in which we can get a least a flavor of war is to rely on the Mr. Touts of this world, who have already heen there, to give us that essential preparation. Sadly, there are all too few who can write as does Mr. Tout. His book should be read by anyone who is involved in armored warfare. It is an excellent balance to those books, concentrating on generals and strategy, that discuss divisions and corps and armies, but rarely the soldier. There is great value to the trainer, who needs to have more than an abstract idea of what he is training for; and for the combat developer, who needs to know what piece of equipment is really important when it comes to battle. Slogans such as "Remember the Soldier", and "Iron sights backup", demeaned by overuse, expose their true and original meaning.

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British Liaison Officer
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BOOK REVIEW POLICY CHANGE

One result of ARMOR's conversion to a Professional Development Bulletin is that book reviews will be more strictly limited to subjects that directly relate to the Armor and Cavalry proponency.

—Ed

The Initial Period of War, S.P. Ivanov (editor). Washington: Government Printing Office, 1974), 311 pp., $9.50 paperback. No. 20 in the USAF's Soviet Military Thought Series.

As its title indicates, the book is concerned with the first days, weeks, and months before and after the outbreak of war. Some attention is given to political, ideological, and economic transitions that occur; however, the emphasis is on the military mobilization, the attack, and the defense. In order of attention, the army, especially the units of deep penetration, comes first, followed by aviation, and lastly naval. The Initial Period of War provides no definite time frame. The pre- and post-outbreak of war can be weeks or months. The sequence of events are oriented toward mobilization and the initial actions. The culminating event is the strategic counteroffensive by the defender. In order to see what "laws" can be extracted, attention is on the initial actions of WWII, especially in Europe. Attention is devoted to the Russo-Japanese War (1904-5), WWI on both fronts (1914), the war in the Pacific (1941-42), and the Russian assault on the Japanese Kwangtung Army (1945), but to a lesser extent.

The beginning section is equally divided between what the military writers of the 1919-1939 period thought about the problem and the historical analysis. The latter section delves into the Battle of Poland (1939), the Battle of France (1940), and the summer of 1941 campaign of what the Soviets call "The Great Patriotic War". The bulk of the attention is on Soviet theorists. No attention was given to the German invasions of Denmark and Norway that preceded the invasion of France. The Soviets were world leaders in airborne operations in the prewar years, and it would have been interesting to see their opinions on the role of airborne forces in the north.

From it all emerges certain themes. First, wars come suddenly and violently. The period of mobilization has gone from the horse age to the motor age. Weaponry, especially the tank, self-propelled artillery, and aircraft, have made the initial moves speedy, devastating and crucial. The offensive side must destroy, demoralize, and prevent the defender from effectively mobilizing or executing his strategic counteroffensives. The opposite point is the other key theme: be prepared to absorb and negate the offensive, protect your mobilization, and move over to the offensive as soon as possible. The Initial Period of War is absorbing in places and a bore in others. Overall, it does provide insight into the crucial opening phases of war.

PETER C. UNSINGER.
San Jose State University

Anti-Tank Helicopters, by Steven J. Zaloga and George J. Balin. Osprey-Vanguard Publishing Ltd, London, 1986. 48 pages, $7.95 (paperback).

Mr. Zaloga has done an excellent job, in the 48 pages of text and eight color plates, of describing helicopters used for antitank missions. He discusses US, Soviet, British, French, and German doctrine and tactics, although obviously only briefly. The familiar Osprey format of 48 pages, eight color plates, and over 44 photos squeezes out all but brief remarks about this complex subject. There is no mention of attack helicopters in use in the Vietnamese offensives in Kampuchea and little about actions in Central America. This is a glossy overview, and in that context is well worth the asking price.

CHARLES D. MC FETRIDGE
MAJOR, Armor, Fort Knox, KY

Recognition Quiz Answers

1. M1 (US). Crew, 4; combat weight, 54,432 kg (60 tons); maximum road speed, 72 km/hr; average cross-country speed, 48 km/hr; maximum road range, 475 km; armament, 1 x 105-mm main gun, 1 x 7.62-mm coaxial machine gun, 1 x 12.7-mm AA machine gun.

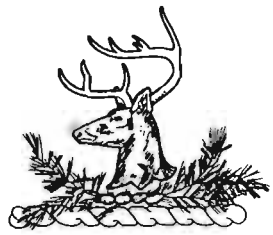
2. PIRANHA APC (Switz). Crew, 3 + 11 infantry; combat weight, 10,500 kg (12 tons); maximum road speed, 100 km/hr; water speed, 10.5 km/hr; maximum road range, 600 km; engine, 6V-53T 300-hp Detroit Diesel; armament, varies, shown with 20-mm Oerlikon main gun in Oerlikon GAD-AOA turret; armor, proof against small arms and shell splinters.

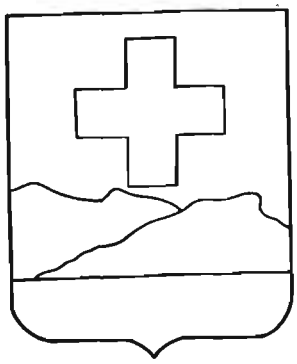
3. LEOPARD I (FRG). Crew, 4; combat weight, 40,000 kg (44 tons); maximum road speed, 65 km/hr; maximum road range, 600 km; fording (w/snorkel) 4m; armament, 1 x 105-mm main gun (shown w/o bore evacuator), 1x7.62-mm coaxial machine gun. 1 x 7.62-mm AA machine gun.

4. CHALLENGER (UK). Crew,4; combat weight, 60,000 kg (63 tons); maximum road speed, 56 km/hr; armament, 1 x 120-mm main gun, 1 x 7.62-mm coaxial machine gun, 1 x 7.62-mm AA machine gun.

5. M60A1 (Israel). Crew, 4; combat weight, 48987 kg (54 tons); (shown with applique armor installed); maximum road speed, 48 km/hr; maximum road range, 500 km; fording (W/snorkel), 4 m; armament, 1 x 105-mm main gun, 1 x 7.62-mm coaxial machine gun, 1 x 12.7-mm AA machine gun.

6. AMX-13 (Fr). Crew, 3; combat weight, 15,000 kg (16 tons); maximum road speed, 60 km/hr; maximum road range, 350-400 km; armament varies (shown with 75-mm main gun, 1 x 7.5-mm or 7.62-mm coaxial machine gun, 1 x 7.65-mm AA machine gun.





Symbolism

The representation of Mount Mansfield and Camels Hump as seen from the west across Lake Champlain, the characteristic portion of the Green Mountains, recalls not only the popular name of the organization's home state, but also the historic record of the "Green Mountain Boys," especially during the Revolution. The silver cross was the badge of the old "Vermont Brigade," 2d Division, VI Corps, one of the most famous brigades of the Civil War and one in which over one-third of all men from Vermont served. The motto is General Sedgwick's famous order to the VI Corps on 1 July 1863 when it started on its 32-mile march from Manchester to Gettysburg - "Put the Vermonters ahead and keep the column closed up."

Distinctive Insignia

The distinctive insignia is the shield, crest, and motto of the coat of arms (all within a shield).

172d Armor

(First Vermont)

Lineage and Honors

Constituted 15 April 1861 as the 1st Regiment Vermont Militia Infantry. Organized 2 May 1861 at Rutland from existing militia companies. Mustered into Federal service 9 May 1861 at Rutland for three months; mustered out 15 August 1861 at Brattleboro. Seven companies reorganized and redesignated as the 12th Regiment Vermont Volunteer Infantry and mustered into Federal service 4 October 1862 for nine months; mustered out 14 July 1863 and continued as separate companies in the Vermont militia.

Reorganized 27 March 1868 as the Brigade of Infantry to consist of three regiments. Reorganized and redesignated 24 March 1873 as the 1st Vermont Infantry Regiment to consist of twelve companies. Mustered into Federal Service 16 May 1898 at Burlington as the 1st Vermont Volunteer Infantry; mustered out 7 November 1898 in Vermont. (Vermont Militia redesignated 1 December 1900 as the Vermont National Guard.) Mustered into Federal service 19 June 1916 for service on the Mexican border; mustered out 11 October 1916. Mustered into Federal service 10 April 1917; drafted into Federal service 5 August 1917. Reorganized and redesignated 9 February 1918 as the 57th Pioneer Infantry. Demobilized 22 February 1919 at Camp Devens. Massachusetts.

Reorganized and Federally recognized 25 June 1919 in the Vermont National Guard as the 1st Infantry. Redesignated 10 April 1922 as the 172d Infantry and assigned to the 43d Division, subsequently the 43d Infantry Division. Inducted into Federal service 24 February 1941 at Brattleboro. Inactivated 1 November 1945 at Camp Stoneman, California. Reorganized and Federally recognized 28 October 1946 with Headquarters at Brattleboro. (172d Infantry [NGUS] organized and Federally recognized 29 January 1953 with Headquarters at Montpelier.) Released 15 June 1954 from active Federal service and reverted to state control; Federal recognition concurrently withdrawn from the 172d Infantry (NGUS).

Elements of the 172d Infantry consolidated 1 March 1959 with the 124th Antiaircraft Artillery Battalion (see annex); consolidated unit converted and redesignated as the 172d Armor, a parent regiment under the Combat Arms Regimental System, to consist of the 1st Medium Tank Battalion and the 2d Reconnaissance Squadron, elements of the 43d Infantry Division (172d Infantry [less elements used to form the 172d Armor] concurrently reorganized as the 172d Infantry, a parent regiment under the Combat Arms Regimental System, to consist of the 1st Battle Group, an element of the 43d Infantry Division). 172d Armor reorganized 1 April 1963 to consist of the 1st and 2d Battalions, elements of the 86th Infantry Brigade (172d Infantry concurrently reorganized to consist of the 1st Battalion, an element of the 86th Infantry Brigade). 172d Armor consoldiated 1 February 1964 with the 172d Infantry; consolidated unit designated as the 172d Armor, to consist of the 1st and 2d Battalions, elements of the 86th Armored Brigade, and the 3d Battalion, a nondivisional unit. Reorganized 1 February 1968 to consist of the 1st and 2d Battalions, elements of the 50th Armored Division.

ANNEX

Constituted 25 February 1943 in the Army of the United States as the 124th Coast Artillery Battalion. Activated 24 May 1943 at Camp Haan, California. Redesignated 28 June 1943 as the 124th Antiaircraft Artillery Gun Battalion. Inactivated 18 October 1945 at Camp Patrick Henry, Virginia. Redesignated 28 August 1951 as the 124th Antiaircraft Artillery Automatic Weapons Battalion and allotted to the Vermont Army National Guard. Organized and Federally recognized 19 November 1951 with Headquarters at Montpelier. Redesignated 1 December 1953 as the 124th Antiaircraft Artillery Battalion.

(Continued on Page 51)

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