

# ***ARMOR***



**Winning the Reconnaissance Fight, *See Page 7***



## Saddle Up... Tonight We Ride

I can't mention any names — this is a professional journal, after all, and this man and his wife were friends — but I can't help noting with sadness that our Army community lost two “dinosaurs” from the old school last month. At a time when we talk about the crucial need for caring, mentoring, and top-down loyalty, this Army couple walked the walk. We will miss them.

Wherever they served, they transformed units into tight-knit family-teams. I had the good fortune to work with them, an Army couple who viewed the Army as family and who took care of family. They turned our fragmented outfit into a team through impromptu Friday gatherings at the office and socials hosted with grace and camaraderie at their quarters. They remembered and honored old Army traditions and made sure we did the same.

Our family's experience serving with them was hardly unusual, but let me be specific: They knew the names of the wives and children of the men serving in our unit. When my youngest daughter went to the hospital, they were among the first to visit. Deployments were made easier because soldiers in the unit knew they would check on our families and render help if needed. Forget a birthday while deployed? No problem; they could be counted on to make things right.

Recently, the Chief of Staff of the Army requested the opinions of our “best and brightest” field grades at the Command and General Staff College at Fort Leavenworth, seeking to find out why young, promising officers were leaving the Army and what they thought of the leadership climate. Within a few days, given the speed of email, some of the results were leaked and available on the web, and the results were not pretty. If one is to believe the comments at these officer sensing sessions, mentoring and top-down loyalty “does not exist

in today's Army.” I winced when I read one respondent's comment, that some of the seniors he'd served with would have gladly thrown him under a bus if it would have advanced their career. Other, less pungent comments reflected the same viewpoints.

Given this state of affairs, bidding farewell to a soldier and his spouse who set the standard in mentoring, caring, and loyalty is especially painful, and to make matters worse, I fear we are retiring more of these teams than we are raising.

I've been blessed with two or three great mentors in my career. It's difficult to define the qualities which comprise a great mentor, but I can tell you that the dinosaur mentioned here was frequently sought out by me and my peers for his time, experience, and counsel, and he never failed to provide. We knew he would go to bat for us, accompanying subordinates to butt-chewings from flag officers instead of invoking the ritual distancing dance. This mentor could also supply legendary butt-chewings when the situation demanded, though recipients of the onslaught understood when the storm subsided no grudges would be held. We respected this leader for his technical and

tactical proficiency, willingness to lead by example, and keen sense of humor (sadly, a vanishing trait). As good as this soldier was, his wife was truly the better half. A consummate team player and joy to be around, she will be missed by all those who served with her.

Those of us and our families fortunate to know and serve with this soldier and his wife will miss them and their tremendous spirit. So, to this Army team and teams like them who depart the Army every month, thank you. And for those of us who remain, it's time to step up and fill the void.

— D2



Photo by Robert L. Stevenson

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# ARMOR

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# LETTERS

## Reserves Not All As Rosy As Author Found in His Unit

Dear Sir:

It was interesting to see the three pieces on the Reserve Component in the July-August issue of *ARMOR*. It is obvious that the AC/RC program and emphasis from the top are making more Active Component soldiers take notice of the RC. I was pleased to read 1LT Sosnicky's article and learn of the strengths of his current tank company. It sounds like D/1-101 CAV is doing a lot of things right.

But I also want to ensure that the readers of *ARMOR* don't think this is the norm across the RC. Having served as an AC/RC embedded trainer in an armored battalion in an Enhanced Separate Brigade in the Southeast United States for nine months (including one AT), it is important that leaders understand just how far we still have to go.

I cannot speak for the entire National Guard, but I do know that two ESBs are struggling to accomplish the tasks assigned by their active duty division headquarters. These brigades are challenged by upcoming SFOR rotations and long term preparation for NTC rotations. Units comfortable training to platoon level are being asked to conduct an NTC rotation as a BCT. The learning curve is steep and sometimes painful.

The price being paid for this stretch in capabilities is a weakening in the Guard's traditional strengths, the same strengths discussed in LT Sosnicky's article. To form "volunteer" companies to send to Bosnia guts each parent battalion (much like active duty battalions). Crew and platoon stabilization is destroyed. Time once spent at AT focusing on gunnery and platoon battle drills is now spent on company, battalion, and brigade maneuver and sustainment.

These challenges are probably isolated to ESBs, but it is important that Armor leaders understand that not everything is perfect in the National Guard and there is still lots of work to be done to develop a working system for AC/RC cooperation.

CPT J. BRYAN MULLINS  
1-312th Regiment, 4th Bde, 78th Div (TS)  
Fayetteville, N.C.

### Reader Comments on Recent Issue Re: Leadership, Army Climate

Dear Sir:

September-October 2000 is a first-rate issue that I have thoroughly enjoyed, especially the articles by Dr. Hofmann on tanks in the Korean War, COL Mahler's piece on perspectives of the Army and society for the 21st century, MAJ Vandergriff's article on MG Wood and the 4th Armored Division in WWII, and CPT Ailsieger's on Cambrai.

I have long been an admirer of MG Wood and his methods, and agree with him that the thrust (backwards) into the Brittany peninsula was stupid beyond words. His subsequent relief was an outrage. What an extraordinary man!

The article on Cambrai illustrates once again that if you launch an innovative and daring operation, you'd better have all hands in full accord beforehand. I am an admirer of J.F.C. Fuller. General Harper should have been sent on a special mission to the Sudan before the operation commenced, with the troops under the command of someone truly dedicated to this novel approach.

Dr. Hofmann amply pointed out what happens to employment of the military when politicians and associated bureaucrats are put in charge of changing situations they don't comprehend, but proceed to blindly issue orders that cannot be carried out effectively or efficiently. How many times have we seen this sorry circumstance?

I found COL Mahler's article especially interesting and absorbing as he brought out many of the problems and attitudes that apply today, particularly when he mentions that "reliance on technology and politically easy solutions may earn you stock options, but it may not make you successful on some future battlefield." Amen to that. Some of these factors reminds me of a long-ago Groucho Marx spoof (was it "Duck Soup"? ) when he decided that if you raised the height of trenches that soldiers wouldn't need any trousers, and then in this vein, if you raise the height even higher you won't need any soldiers. If I haven't got this right, perhaps one of your readers will set me right.

On the concern about warriors leaving the service — and they seem to be in increasing numbers — the colonel mentions several of the underlying reasons, but he left out a crucial one: the continued feminization of the Army. As LTG Kennedy asserted, we now have "Mommy's Army." To the extent that this is true, it should not surprise anyone as to why warriors decide there is no place for them any longer. I believe it is quite true. I believe also that when high-ranking officers continue to lie about the consequences of wiped-out standards and blatant favoritism produced by this feminization program, that the crucial element of trust is gone. It doesn't take long for an organization to fall to pieces under these conditions....

COL GEORGE G. EDDY  
Austin, Texas

### Reader Has a "Real Problem" With Non-doctrinal "Red Zone"

Dear Sir:

I think the article "Victory in the Red Zone" (Sep-Oct 2000) is well written, researched, and provides some very worthwhile points. I

would, however, like to make some observations.

The term "Red Zone" is a real problem. I happened to be at NTC as an observer a few years ago when I first heard the term and was unclear as to what it meant. CPT Panastasiou provides a definition from a CTC quarterly publication which explains it. The term was first used by a COG at NTC who, I am sure, felt it somehow provided clarification to the training units. It is, of course, originally a football term that is commonly understood to mean the area from the 20 yard line to the goal line, where a team must score when it gets to that area. The CTC publication defines it as the area from the Line of Contact (LC)(LD?) to the unit's Limit of Advance (LOA). This can be tens of kilometers and includes the enemy security zone and Main Line of Defense. The author explains it is a non-doctrinal term but does not explain why it is necessary to use it. When a new COG uses a term like "Green or Blue" zone, should that be the next non-doctrinal term to be in fashion?

The author also confuses the terms movement and maneuver. Movement is one component of maneuver. The other is Fires. In the segment labeled "Maneuvering in the Enemy's Direct Fire Battle Space," the author has a good explanation of maneuver, but it is at odds with his earlier use of the term.

I am disappointed that the author does not include more emphasis on the use of indirect fire. The fire support systems are the quickest and most efficient method of focusing combat power. Especially at the company level, they should be one of the first things a commander goes to.

The reason that the use of correct doctrinal terms is so important is so that we all understand what the terms mean. The invention of new "popular" terms is problematic as it creates the impression we can generate new words any time we want with no concern as to whether or not the entire community will understand them.

JACK E. MUNDSTOCK  
LTC, IN  
28th Field Training Group

### Clarke's Rank, Assignment Were Wrong in 4th AD Article

Dear Sir:

Though I enjoyed MAJ Donald Vandergriff's article on the 4th Armored Division (Sep-Oct 2000), there are two nits that need picking.

I doubt that Bruce Clarke (USMA 1925) was a lieutenant when Creighton Abrams (USMA 1936) was a major, and General Clarke was definitely not "later NATO commander," despite the footnoted source. As a lieutenant in the 1/37th Armor, 4th AD, in the early 1960s, I know very well that General Clarke was the CINCUSAREUR and com-

mander of CENTAG when the wall went up in Berlin.

MICHAEL D. MAHLER  
COL, U.S. Army (Ret.)

### CG's Reasoning on Armor Badge Brings a Reader's Rebuttal

Dear Sir:

As a Vietnam-era tanker (served as 11 Echo & Delta), I must respond to the Armor Center CG's article in the September-October issue. The concept of a CIB, Combat Medic, or other badge is not to divide soldiers into "have and have-nots." It is to recognize the holder of such an "award" for having faced combat with the enemy, having faced the terrible violence of war and paid the price of its life-altering consequences. No man is ever the same after combat.

When an infantryman in his fire team, squad, or platoon finds the enemy and closes in combat to kill them, he might kill another human being; he might lose a friend and comrade. He may not survive himself, but will do his duty regardless of the outcome.

The Combat Medic responding to a call for help, unarmed and vulnerable, will react and come to the aid of the fallen comrade. He will do his duty, often at great cost to himself.

A tank crew must act as a single lethal fighting machine. The Thunderbolt you spoke of is not an exercise on a range, a computer simulation, or evaluation of skill by a superior, other than God.

"Fighting the Tank" can produce an environment as close to hell inside the tank and equal to the force brought to bear against the enemy.

We will not always have the advantage of an Abrams against a T-72. Crewmates will die; whole tank crews will die, but they will fulfill their duty.

The Combat Badge is recognition of completing that duty, regardless of the cost, and, like the Good Conduct Medal, should be awarded to enlisted soldiers only.

JOHN MEOAK  
Okemos, Mich.

### Badge Decision Was Right... But for Different Reasons

Dear Sir:

I'm writing in response to MG B. B. Bell's "Commander's Hatch" article regarding the Combat Armor Badge concept.

General, thank you for answering publicly the (NCO's) question (to the Chief of Staff regarding the Armor Badge proposal).

In my opinion, however, you got the right answer but for the least important — if not

wrong — reasons. Marks of distinction and honor for true combat soldiers (Armor, Infantry, and Artillery only) are a good thing. We are special, and I do not think it is wrong, not only for us to think that way, but for any of the rest of the Armed Forces and civilian government officials not to forget! When used properly, we kill people and break things. The right reasons are:

- We already have a EAB (Excellence in Armor Badge). It is called TCQC (Tank Crew Qualification Course — Table XIII). It is just a matter of ensuring that standards are maintained and some appropriate symbol is developed for the class A uniform. I know that all the members of my platoon were AOC/MOS qualified, met or passed weight standards, APFT, individual weapon qualification, GPE, and "qualified" their tank in their assigned crew position. No one, I mean no one, ever asked, much less told me or a member of my platoon, to remove our qualification patches from our fatigues — regardless of duty station.

- Since we already have the EAB, it would only be a logical extension to provide combat experienced tankers a CAB (Combat Armor Badge). It could be much the same as the class A EAB symbol but with a wreath to distinguish between the two — much like the EIB/CIB. In fact, the requirements could be much the same as the CIB, only to earn either Armor badge you would have to be assigned to a TANK!!! No exceptions.

The only problem that I see is that the Chief of Infantry modified, i.e., lowered, the standards for the CIB. This resulted in the ability of individuals to earn it while not meeting the core requirements which have been in place for 50-plus years, thereby making the value of the Desert Storm CIB questionable — at best. This is especially problematic since it is used as a promotion discriminator — officially or not. However, it is the Chief of Infantry who has to live with the decision, not to mention sleep with it.

I am supremely confident that our Chief would not allow this to happen — ever. One hundred hours of movement to contact, sporadic long range direct fire engagements, and the enemy surrendering en masse to helicopter drivers, in the desert, does not qualify you for a CAB. Perhaps the Order of Saint George (and then only if you submit and justify it per the guidelines outlined by MAJ Daigle's "Saddle Up" editorial) for all the crap put up with for the six months of "in country" training, inspections, and VIP visits, but not a Combat Armor Badge. Get real.

In closing, as the Submariner and Ranger are "special" and are so designated by distinctive symbols, no less are we. Remember:

*"We sleep safely in our beds,  
because rough men stand ready  
in the night to visit violence  
on those who would do us harm."*

— George Orwell

That is what we do. We are special. We certainly deserve and have earned no less!

JOSEPH C. KOPACZ  
COL, Armor (Ret.)  
Louisville, Ky.

### Uniform Discipline Truly Is An Indicator of Unit Morale

Dear Sir:

Command Sergeant Major Preston ("Uniform Discipline: A Good Indicator of a Unit's Discipline," Jul-Aug 2000) brings us back to one of the most important fundamentals of the business of war. Discipline starts with the little things. His comments of uniform discipline are true today as they were true 33 years ago in the jungles of Vietnam. Uniform discipline is as important for the leader as it is for the led. If we cannot motivate a soldier to follow the proper uniform discipline, how do we expect to motivate him to risk his life in combat? I recommend CSM Preston's paper to all who want to lead.

LARRY L. MENGEL  
COL, U.S. Army (Ret.)

### Allow NCOs to Set Standards And Enforce Them

Dear Sir:

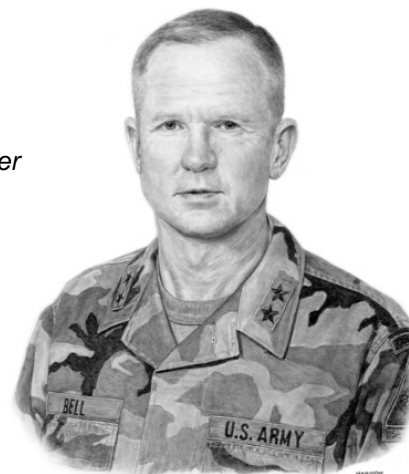
CSM Ken Preston's article in the July-August 2000 issue ("Uniform Discipline: A Good Indicator Of A Unit's Deeper Problems?") reminded me again of the tremendous responsibility that officers have to hold their noncommissioned officers accountable, as CSM Preston eloquently argues, and also to support those noncommissioned officers as they try to do the right thing at the right time. I encourage officers at all levels to pay attention to CSM Preston's article, and to allow their NCOs to set and enforce high uniform standards, and then to work together to establish standards for the harder things, such as tactical and administrative SOPs that cover every aspect of unit operations.

It is especially critical for our overworked and undermanned Army, as it deploys worldwide to perform both combat and more confusing non-traditional missions, to charge its NCOs with setting and enforcing high standards in everything we do. Whether you like it or not, uniform standards are a basis of discipline in units. Disciplined units perform better in peace or in war, and officers must "lead by example." That means that good units set and enforce uniform standards in the training area, the motor pool, and at social occasions that apply to everyone in the unit, including the officers.

I had the privilege to have CSM Preston as my brigade CSM for 18 months while I

*Continued on Page 44*

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



## Planning a New Future for the 2nd ACR

"Preparing now for an uncertain future" is a cornerstone of our National Military Strategy. The Army Transformation Plan is our blueprint to meet this challenge and Fort Knox and the Armor Branch are at the cutting edge. We no longer have the luxury of an Army forward-deployed on a prepared battlefield as we did during the Cold War. Indeed, the missions of shaping the international environment and responding to the full spectrum of crises dictate a mobile, lethal, and survivable force that is quickly deployable and easily sustained. To achieve these aims of transformation, we are taking an aggressive approach towards an Objective Force Goal.

First, we are committed to recapitalizing our current tank/mechanized legacy force to ensure warfighting dominance during transformation. I covered the essential points of this legacy force recapitalization in the July/August issue of *ARMOR* magazine.

Second, we are aggressively forming Initial and Interim Brigade Combat Teams (IBCT's) to meet critical warfighting requirements. Optimized for small-scale contingencies, these units will have utility across the full spectrum of conflict.

As an important adjunct to the IBCT work, we are now turning our force development efforts to the 2nd Armored Cavalry Regiment (2ACR). TRADOC has recently chartered the Armor

Center to form a blue ribbon panel to examine the roles and missions of 2ACR, develop a concept of employment, define required capabilities, and lay out a modernization plan to increase the Regiment's utility to the Army. We have formed the panel, and it will conduct its work with a goal to deliver an operational and organizational concept by the end of November. Members of the panel will come from across the widest spectrum of expertise in one or more of the following areas: cavalry operations, entry operations, force projection deployment and employment, corps decisive operations, stability and support operations, and sustainment. FORSCOM, XVIII Airborne Corps, and the 2ACR will send representatives to participate as members of the panel to add their expertise and insights to the Regiment's reformation. Although the concept, organization, and equipment are yet to be decided, some key design principles follow:

*Optimize the 2ACR for employment with XVIII Airborne Corps.* This principle aligns the regiment with a corps for equipping, training, and planning. It will also be capable of being employed as part of other Army units or as part of a joint task force. Aligning the regiment with XVIII Corps does not require 2ACR to be airdrop-capable. It does, however, dictate that it must have the capability to rapidly deploy by air.

*The design must be supportable within current Army structure and pro-*

*grams.* Army end strength will not be increased to accommodate a redesigned regiment. Further, funding for a completely new replacement for the HMMWVs is not feasible. Therefore, a replacement system (or systems) must come from existing Army inventory or commercial off-the-shelf items.

*The regiment must be capable of executing within its capabilities all traditional cavalry missions, and must fight as a combined arms organization, both horizontally and vertically.*

Because 2ACR is employed normally by a corps, it must have the capability to conduct reconnaissance, security, and economy of force missions. In order to accomplish this, it must operate as a combined arms team.

*Sustain operations from internal CSS sources over extended areas with exposed lines of communications for up to 72 hours.* The ground cavalry squadrons must be capable of extended operations without resupply, with an objective of 72 hours (+) of supply carried on board squadron vehicles. Within the troop, if not the squadron, all vehicles will share a high degree of chassis commonality. This will reduce the number of supporting mechanics, simplify maintenance operations, and eliminate requirements for large numbers of varied repair parts.

*Continued on Page 26*

*CSM Carl E. Christian  
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## Armor NCOs Do Well in SFC Selection Results

SFC selection results for CY00 are now out, and the results are tallied. Overall, CMF19 soldiers did great, with our E6s earning a 21 percent selection rate compared to the Army's average selection rate of 19.5 percent. The Armor force selection rate also exceeded that of the other top two maneuver combat arms CMFs, almost double that of the Infantry at 10.7 percent and about 1.5 percent higher than Artillery at 19.7 percent. Although Armor selection was down 6 percent from last year, it was still above the Army average.

One important promotion trend continued: our Excellence in Armor (EIA) soldiers again had the highest select rate at 54.6 percent. I believe that two factors determined this rate. The number one reason our EIA soldiers are selected at this phenomenal rate is that these soldiers are the very best soldiers in the Armor Branch. Once our soldiers earn EIA, they seem to remain in the band of excellence. And, of course, we tell selection board members to look for NCOs enrolled in this prestigious program.

The master gunner assignment and platoon sergeant time were the two biggest discriminators beyond the key leadership requirements. Although master gunner is not a "leadership" position, records reflected that these NCOs are clearly above the rest. They strive to stay in the tank commander positions and are normally "the" NCO chosen to serve as a platoon sergeant over other SSGs and occasionally SFCs. For selection to SFC, master gunners accounted for 18 percent of those selected. In fact, 13.6 percent of those selected were both EIA soldiers and master gunners.

Armor NCOs continue to do well in furthering their education. All were BNCOC graduates and 15 percent of the primary zone SSGs were ANCOC graduates. Fifty percent of the primary zone and 36 percent of the secondary zone had between 1 to 4 years of college. The average education level of CMF19 is one year of college, which is also the Army average. With technology changing how we do things, this trend is one our Armor Force needs to continue to support. And the education must not just be stand-alone college courses, but a college program that complements the Armor soldier's career path.

The Armor records reviewed continued to show numerous questionable or inflated NCOERs. These NCOERs rated soldiers as excellent, but did not include bullet comments that supported the rating. The board members generally ignored those excellence blocks that were not justified. Some of these soldiers probably did deserve those ratings, but were not given full credit because of those poorly written bullet statements. Also noted was an inconsistency in ratings when an NCO failed the APFT or was enrolled in an overweight program. Some raters were giving "Success" ratings and some were giving "Needs Some Improvement." Raters must place more emphasis on accurate ratings and writing NCOER bullets that are measurable through demonstrated performance that supports the rating of excellence, success, or needs improvement.

I need to stress that NCOs themselves, as well as their leadership, must place more emphasis on updating and main-

taining the soldier's Enlisted Records Brief (ERB), Official Military Personnel Fiche (OMPF), and official photographs. As an example, records reviewed for staff sergeants eligible for promotion in the secondary zone revealed that over 25 percent of them did not have a photograph.

I am glad to say that physical fitness among CMF19 soldiers appears strong. Many NCOERs reflect high APFT scores and stress excellent military appearance. However, some NCOERs noted "YES" toward compliance with AR 600-9 weight standards, but official photos and weight listed on NCOERs put these ratings into question. In some cases, a fair number of photos were outdated, and the NCO had a significant increase in weight documented on his NCOER. Outdated photos or the lack of an official photo are a definite discriminator, especially if AR 600-9 standards are questionable.

Warfighting competence and TO&E assignments as an armor or scout leader are paramount and will continue to influence promotion selections in the future. NCOs must strive to become branch qualified before moving on to TDA assignments and should avoid back-to-back TDA assignments.

The bottom line is that the overall career management, performance, and potential of the CMF19 SSGs is outstanding. CMF19 has selected some of the Army's best to help lead us in the 21st century. Congratulations to each of those selected. This is just another reason I can say:

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



# Building on Force XXI Task Force And Brigade Recon Troop Scout Platoons

by Sergeant First Class Frank R. Belonus

With the collapse of the wall dividing East and West Germany on 8-9 November 1989, the Cold War, as we knew it, came to an end. The end of the Cold War, along with the Army's technological revolution, justified the Army's reduction in size in the 1990s.

Technology also allowed us to do more with less, and forced us to rewrite the doctrine and standard operating procedures we use to implement these new tools of the battlefield. The recent development and fielding of the Brigade Reconnaissance Troop (BRT) and the development of the first Initial Brigade Combat Team (IBCT), with its Reconnaissance, Surveillance and Target Acquisition (RSTA) Squadron, has caused us once again to review how our reconnaissance assets are configured and employed on today's battlefields.

Fielding equipment like the Unmanned Aerial Vehicle (UAV), the brigade reconnaissance troop forward, and JSTARS, the commander now has eyes that see the enemy much deeper in the reconnaissance battlespace. With Strikers and Colts forward as part of the brigade reconnaissance troop, as well as air support, the commander can now effectively shape the battlefield and degrade the enemy with indirect artillery and MLRS fires prior to any direct fire contact. The RSTA Squadron appears to be designed to meet this forward battlefield shaping mission as well, although there seems to be a question of air assets being part of this organization.

It appears the organizations like the BRT, IBCT, and RSTA Squadron are based on the technology and capabilities of equipment not yet fielded or developed. Equipment like the Unmanned Aerial Vehicle (UAV), Recon-



naissance Vehicle (RV), Mobile Gun System (MGS), Command Vehicle (CV), and Long Range Advanced Scout Surveillance System (LRAS3) will overcome some tremendous shortfalls in reconnaissance today.

An example of one such shortfall is adequate optics for the HMMWV scouts. Because HMMWV scouts have such poor optics, they have to close with the enemy to the point that their survivability is regularly compromised in order to provide accurate reporting and the ability to paint a clear picture for the commander. With the fielding of the LRAS3, this problem will be tremendously reduced and visual standoff will be greatly increased. But this technological change will not be fielded for some time.

The question now is, how do we provide the commander with the intelligence he requires and sustain surviv-

ability for our BRT and task force scouts with the equipment that is currently available?

This article contains proposals and techniques on training, configuring, and equipping today's scouts to remain effective until we develop and field the equipment and units of tomorrow. It is vital that we take the time to accurately test and develop future equipment and units to ensure they meet the needs of tomorrow's battlefields. It is just as vital that we attempt to correct shortfalls faced by today's scouts.

## Manning

Modern manuals and standard operating procedures are not written for the current six-HMMWV scout platoon configuration. *FM 17-98, Scout Platoon Manual* dated April 1999 refers only to the ten-HMMWV scout platoons or the six-CFV scout platoons. *FM 17-98* states that these platoons can sustain only three OPs for long durations (over 12 hours). Once in the Force XXI, six-HMMWV platoon configuration, manpower will only allow two long duration OPs. The three-man crews of the HMMWV have always had a difficult time conducting OP/LP operations, let alone security patrols as well.

HMMWV scout crews are also incapable of dismounting a pair of scouts forward of their vehicle to clear danger areas and intervisibility lines, and still leave enough personnel on the HMMWV to maneuver or conduct actions on contact. Scouts constantly die in training because they do not dismount and clear forward of their vehicle. This problem will be resolved with the fielding of the new RV which will

## Battalion Task Force Scout Platoon

### Headquarters Section

#### Vehicle #1 M3 CFV

LT (PLT LDR)  
SGT (Gunner)  
SPC (Driver)  
PFC (Loader)  
PFC (Scout)

#### Vehicle #4 M3 CFV

SFC (PSG)  
SPC (Gunner)\*  
SPC (Driver)  
PFC (Loader/Mechanic)  
PFC (Medic)

#### ALPHA Section Vehicle #2 M1026 HMMWV

SSG (Sec Sergeant)  
SGT (Gunner)\*  
SPC (Driver)  
PFC (Scout)

#### BRAVO Section Vehicle #5 M1026 HMMWV

SSG (Sec Sergeant)  
SGT (Gunner)\*  
SPC (Driver)  
PFC (Scout)

#### CHARLIE Section Vehicle #7 M3 CFV

SSG (Sec Sergeant)  
SPC (Gunner)\*  
PFC (Driver)  
PFC (Loader)  
PFC (Scout)

#### DELTA Section Vehicle #9 M3 CFV

SSG (Sec Sergeant)  
SPC (Gunner)\*  
PFC (Driver)  
PFC (Loader)  
PFC (Scout)

#### Vehicle #3 M1025 HMMWV

SGT (Sqd Leader)  
SPC (Gunner)  
PFC (Driver)

#### Vehicle #6 M1025 HMMWV

SGT (Sqd Leader)  
SPC (Gunner)  
PFC (Driver)

#### Vehicle #8 M1025 HMMWV

SGT (Sqd Leader)  
SPC (Gunner)  
PFC (Driver)

#### Vehicle #0 M1025 HMMWV

SGT (Sqd Leader)  
SPC (Gunner)  
PFC (Driver)

have a six-man crew, four of them being dismounts.

A solution for this problem until the RV is fielded could be to place a fourth scout on each HMMWV. This additional scout can act as a loader/assistant gunner while mounted and support patrols and OP/LP operations while dismounted. This will also allow two scouts to dismount, clearing forward of the HMMWV while the driver and gunner remain on the vehicle to cover the dismounts and maneuver the HMMWV forward.

The brigade reconnaissance troop scout platoons should continue to serve on HMMWVs until the new RV is fielded. The BRT scout platoons should have eight HMMWVs, not six. Eight HMMWVs with four-man crews will create a 32-soldier platoon, four soldiers less than the future six-vehicle RV platoon. The current 18-man, six-HMMWV platoon is simply not capable of accomplishing all the tasks required to ensure mission success. The BRT TOC should be a C2 LAV until the new Command Vehicle is fielded. This vehicle will support the communications needed and allow room for battle tracking.

The battalion task force scout platoons must be prepared to move ahead of the brigade reconnaissance troop at any time, and be the reconnaissance asset

furthest forward on the battlefield. The BRT will not always be able to be forward of the task force scouts because there will be times that the brigade commander will use the BRT in another capacity, such as flank guard missions. Task force scouts must increase their optics capability, survivability, and capacity for extended operations in the reconnaissance battlespace. The following suggested modification to the battalion task force scout platoon addresses these problems, as well as others. The following is the proposed organization.

Enemy aircraft and air inserted dismounts are two of the greatest threats to reconnaissance assets forward on the battlefield. To counter the air threat, the gunners (noted with asterisks on the table), and their vehicle commanders, are to be trained as two-man MANPADS (Man-Portable Air Defense Systems) teams, and have Stinger missiles in their load plan. Scouts must only engage enemy air in the reconnaissance battlespace in self-defense, otherwise they may compromise the reconnaissance mission.

A medic and mechanic need to be permanently attached to the platoon, cross-trained in mounted and dismounted operations and the platoon's standard operating procedures. This cross-training is critical to the surviv-

ability of these assets working this far forward. Both the medic and the mechanic will be part of the platoon sergeant's CFV, which has the room for them and their equipment. The medic must be prepared to stabilize casualties for extended periods of time until exfiltration or medical evacuation. The mechanic must have the ability to adapt and overcome difficulties. His approach should be geared toward quick fixes to sustain operations until time permits proper corrective repairs.

### Tactical Employment

The debate over the best scout vehicle is never-ending. Even today, as word gets out about the development of the new RV, critics line up to chide the future vehicles. But until these new vehicles are fielded, each type of vehicle we currently have has something to offer and should be integrated according to its capabilities to maximize mission success.

The deeper into enemy territory that scouts go, the lighter and quieter they must be. Scouts moving deep into the battlespace should be inserted by air or HMMWV to maximize stealth.

The closer you get to the main body in the brigade combat team, the greater the need to have reconnaissance assets with survivability and lethality. With the downsizing of the Force XXI task force and brigade combat teams, the task force and brigade commanders cannot risk the loss of their fighting assets in the reconnaissance fight.

In offensive operations, enemy reconnaissance must be defeated in the reconnaissance battlespace prior to committing the first task force. Enemy eyes on the brigade or task force main body have proved devastating on numerous occasions throughout history, and aggressive counterreconnaissance is a must. The forward task force company conducting counterreconnaissance should have a platoon designated to clear possible enemy OPs. Bradleys or tanks will fix and destroy enemy that the scouts have either lost contact with or cannot engage with indirect fire. Counterreconnaissance armor or air can also work with scouts in hunter/killer

teams. M3 CFVs in the task force scout platoons, working in depth, overwatching the light scout vehicles moving into sector, can also support in this role. The CFV has the optics and weapons range to provide this support in depth so as not to compromise stealth for the reconnaissance assets forward. These scout CFVs, forward with the scouts, will provide immediate support for the light scouts in a surprise meeting engagement, in turn increasing their survivability. Direct and indirect fires coordinated by the CFVs will also increase the likelihood of the scouts in contact successfully breaking contact and continuing with their mission.

With HMMWVs, CFVs, and LAVs forward on the battlefield, the enemy will not be sure what size or type of element they are facing. This confusion may cause the enemy to commit early, allowing greater warning and reaction time for friendly commanders.

The CFVs can support infiltration in echelon by providing overwatch for the initial teams moving into sector. The first echelons in sector then provide cover for the rest moving into sector from their set positions. This creates an umbrella of security and overwatch for the follow-on teams moving into sector, as well as attached assets such as NBC and smoke vehicles. The CFVs can also escort these assets moving into sector or act as gun support for medevac assets going forward.

CFVs organic to the task force scout platoons will support convoy and route security operations. They also support stability and support operations, in or out of MOUT environments. The task force scout CFVs can also be pushed forward, in an emergency, to support the brigade reconnaissance troop.

When conducting offensive operation planning, always plan operations to continue beyond the objective. The reconnaissance mission always takes follow-on missions into consideration and constantly leapfrogs reconnaissance assets forward of the task force early enough to provide the critical information needed to generate reconnaissance pull on the battlefield.

Because commanders want their reconnaissance assets in sector as soon as possible, task force scouts are either conducting resupply operations or are already moving into sector for the next

mission during defensive operations. Because of this, the counterreconnaissance and screen line operations are best left to other units in the task force, such as the mechanized infantry. Once task force scouts get established in sector to support the next offensive operation, they will provide advance warning to the task force of approaching enemy and conduct battle handoff to the counterreconnaissance force if the enemy's destruction was not possible with indirect fires.

The brigade reconnaissance troop can further destroy enemy reconnaissance with indirect fires from their Strikers/Colts if they are also forward. Task force scouts can conduct continuous operations forward for extended periods of time if they don't have to conduct screen line operations in the defense. This gives them the time needed to prepare for the next extended operation.

Conducting risk management and evaluating safety also includes the threat the enemy presents. Everyone, at all levels, must evaluate how to reduce this threat. Select routes that are outside enemy weapons range once proposed enemy positions are templated. Using Terrabase on the possible enemy positions will also allow you to see what the positions can and cannot see, and this will also help in route selection. Once the initial echelons are in sector, the CFVs in the follow-on echelons move in and clear these potential threat areas. The CFVs have a greater likelihood of survivability and defeating the enemy threat in a meeting engagement.

The communication scheme is also vital. One technique is for the task force scout platoon to have the S2 monitor the scout platoon net, allowing the scouts to be on the platoon net and the task force command net. Also preset is the indirect net, A&L and O&I, which act as the scout backup or alternate net, especially when the task force is in direct contact. It is also wise to preset the nets of the companies in the lead of the task force to provide real-time information directly to the elements getting ready to be in contact. During the reconnaissance fight, the intelligence is pushed up on platoon internal net by S2 eavesdropping as the reports come over the net. This provides real-time information. If S2 is having trouble monitoring the reports,

they communicate to the scouts on task force command. This prevents the higher headquarters from tying up the platoon net.

Scouts will regularly paint the picture for the command and commander on the command net. Net discipline is very important to this technique. Once the task force is in contact, the command net becomes overwhelmed so most intelligence continues to be pushed up on the platoon internal net. Two scout vehicles will monitor platoon internal and task force O&I. These teams will ensure all reports are being received by S2 when the command net is tied up.

Communication must be a constant consideration in the planning phase of an operation. If terrain is going to limit transmissions, mutual communication support must be planned. Transmission limitations can be determined by a reconnaissance of the area of operation, and if this is not possible, by a map reconnaissance.

To sustain operations for more than 12 hours, section integrity must be maintained. A scout platoon of six HMMWVs maintaining section integrity has the capability to observe only one, maybe two NAIs. If two NAIs are tasked for an operation greater than 12 hours, the scout platoon will not be able to provide redundancy or depth on the tasked NAIs, and they are really in trouble if a scout team is compromised. For this reason, it is critical that a scout platoon be at least eight vehicles and that at least half these vehicles be four-man crews to facilitate dismounted operations. With the addition of four CFVs to the task force scout platoons, more NAIs will be covered in depth and the CFVs will provide the redundancy needed to ensure success with their optics and weapons range capability.

### **Using Recon Pull in the Attack**

Scout offensive planning should be done in multiple phases. One of the phases is supporting the task force once they have executed operations and are in contact. This is done by pulling the task force through each security belt of the enemy, by having eyes deep initially covering these belts, and by continuously bounding scout teams forward, in depth, even after task force contact is made. The scout plan should also include a fire support plan, not only for the reconnaissance fight, but

also to support the task force while they are in contact, denying the enemy the ability to reposition and to take action against the task force.

Infiltrating scouts in depth, as well as assigning subsequent OPs in depth, will allow the commander to have eyes deep so that they can help pull the task force through identified weaknesses in the enemy's defensive belt.

The OP plan should have depth to allow overwatching security of the task force as it moves into sector. The recon plan can be triggered by the task force's arrival at identified phase lines. Then designated scout teams move to subsequent OPs, further in depth, to continue providing recon pull.

When time is limited, Bradleys and/or tanks should augment the scouts that are moving into sector in order to provide increased survivability and to overwatch scouts bounding to subsequent OPs. These weapon systems will also provide killing power forward to assist in fixing the CSOP and enemy counter-reconnaissance. Having Bradleys and tanks forward on the battlefield will also cause enemy confusion, possibly triggering his courses of action prematurely.

With eyes deep, pulling the task force to the enemy's weak points in each layer of defense, the task force's likelihood of success will be greater.

### **Infiltration Techniques Vs Traditional Techniques**

Scout infiltration and exfiltration has been addressed for the first time in *FM 17-98* (dated April 1999), Chapter 3, Section 7. This manual only scratches the surface of this technique, yet it has proven to be extremely successful in numerous environments and situations.

The intent of infiltration and exfiltration is to move using the most secure route to ensure that the scouts are not detected. Infiltration and exfiltration can take place both mounted and dismounted. While it is common for dismounted teams to use infiltration techniques to prevent detection, few perfect this skill mounted.

An example of scout infiltration could be a scout section moving into the area of operation using infiltration techniques prior to committing the rest of the scout platoon. Once they are set, they can conduct a zone recon from

their set position and provide overwatch for the rest of the scouts as they move through the sector conducting the conventional zone reconnaissance. The rest of the platoon would then focus on the dead space of the set section and the area the set section cannot observe. This set element can also provide direct and indirect support to any of the scouts who come into contact, and can help them maneuver to break contact. This increased security for those executing the conventional zone reconnaissance will increase their survivability and success. Most of the critical tasks of a zone reconnaissance can be accomplished from a set point, on key terrain with the last teams moving conventionally into sector, clearing the dead space of those teams already set. This technique of zone recon also reduces the chance of meeting engagements and being compromised, yet still meets the commander's intent of clearing the zone. Infiltration can also be used to get teams deep into sector, quickly, in offensive operations, in order to put eyes on the enemy defensive belt for timely reporting. This will give the commander the intelligence required to choose his course of action prior to committing his task force or brigade combat team. This technique also allows for overwatch of the other teams moving into sector, teams doing a detailed obstacle report, or teams executing a stealth breach. Infiltration has also proven a successful movement technique to get to NAIs and TAIs for Scout/Colt teams. In dismounted operations, a sniper team can be infiltrated to a key position and provide intelligence and cover to the dismounted team moving into sector. Sniper teams can also provide cover for teams dismounted conducting reconnaissance on obstacles, bridges, and so on.

Primary and alternate infiltration and exfiltration routes should be well planned. They should be reconnoitered by land or air when possible, but a map reconnaissance must be done at a minimum. Terrabase should always be used, if time permits, to proof the routes and proposed OP locations. Terrabase will not only allow you to maximize the terrain, but also identify possible enemy positions that can observe you, which will help in development of the fire support planning and give an area of focus for those moving into sector. Infiltration routes should also be placed on CSS graphics as routes to conduct CASEVAC and

emergency resupply. These routes can also help in determining casualty collection/handoff points for the supporting units pushing forward supporting CASEVAC operations.

Successful infiltration routes should be maximized. If one team was successful, use the same, secure route for all the other teams that are moving into the same area of operation. Using the same, successful route will also allow the later sections moving into sector to be covered by the sections that initially moved in and are set, allowing the later sections to have a relatively safe route until they leapfrog past the furthest forward section.

The speed in which infiltration is conducted varies as per METT-TC (mission, enemy, time, terrain and weather, troops, and civilian considerations). On most missions, there will be times that the vehicle rarely goes above an idle, with scouts frequently dismounting forward clearing the way, increasing infiltration success. There will be other times that intelligence may show that it is a race for key terrain and, with overwatch already established in depth, speed will be essential.

Successful route selection and infiltration must be constantly trained and rehearsed in order to remain proficient. Infiltration and exfiltration lane training is relatively easy to coordinate and conduct.

### **Infiltrate in Echelons**

If a scout becomes compromised, the enemy can template our doctrinal formations at the location, and locate most of the scouts moving into sector. A way to overcome this is by infiltrating in echelons, that is, allowing staggered infiltration of teams or sections at different times. This technique will prevent the entire task force scout platoon or brigade reconnaissance troop from being compromised while moving into sector.

This technique also allows the teams that are compromised while moving into sector, to be replaced by those teams moving into sector at a later time. This increases the likelihood that the most important NAIs/TAIs are covered. This will also prevent teams from having to shift laterally, forward on the battlefield, or to replace compromised OPs, which would increase the risk, and decrease survivability.

Infiltration by echelon also allows the scout leader to move assets into sector almost immediately, with minimum guidance, while the parent task force or brigade combat team is still in the R&S development phase. This will allow eyes deep quickly, providing information for the commander to assist in the planning process. The scouts can also provide overwatch for the teams moving into sector once the R&S plan is developed. S2 intelligence and R&S planning should drive the infiltration timeline. Infiltration times should be random and allow earlier departing teams time to be successful in their infiltration, so those successful routes can be used by the follow-on teams.

Being able to anticipate the commander's intent for the upcoming mission and analyzing the terrain in the area of operation will allow the placement of the first echelon moving into sector relatively close to where they will be needed in the R&S plan. Their infiltration route and set point is also planned to support communications and provide overwatch security for the other teams moving into sector at a later time. With the integration of the brigade reconnaissance troop, it will be critical that task force scouts maintain the freedom to maneuver and replace the brigade reconnaissance teams that become compromised. This will allow the brigade combat team commander to have eyes on those NAIs critical to him, and in turn, critical to the task force as well. We must be careful not to strip away the reconnaissance assets needed by the task force commander as the brigade reconnaissance troop becomes depleted. The task force commander must have his scouts to conduct reconnaissance pull of the task force on the battlefield.

### **Reconnaissance Forward**

The creation of the brigade reconnaissance troop greatly eases the burden of the task force scouts deploying too far forward of the task force. But the task force scouts must still be prepared to be the most forward element of the brigade combat team, if the BRT is conducting resupply, flank, or rear operations. The task force must also be prepared to conduct forward passage of lines through the brigade reconnaissance troop. In the event the brigade reconnaissance troop is forward of the task force scouts, the battlespace must be tied in, in depth, between these elements to ensure effective battle handoff

and a seamless reconnaissance blanket forward of the brigade combat team.

Task force scouts must become more situationally aware of friendly forces forward, as well as active MSRs through their sector. This much activity forward is something scouts may not be used to.

### **BRT-Task Force Scouts Coordination**

Coordination between all the assets in the reconnaissance battlespace must be continuous. The task force scouts and brigade reconnaissance troop must know where each other are at all times. Task force scouts must know the mission of the brigade reconnaissance troop and be prepared to replace them on short notice. Yet it is critical that the task force commander is not stripped of his reconnaissance assets due to attrition of the brigade reconnaissance troop.

Flank and rear coordination must be conducted in detail. Brigade and task force scouts must keep one another informed and make battle handoffs seamless. The only way this can happen is through constant training, with all scouts in the brigade combat team working off the same type of standard operating procedure. This will allow cross-leveling to accomplish the mission and standardization of how these missions are done. Brigade reconnaissance troop scouts and task force scouts must frequently drop to each other's frequencies to cross-talk and coordinate. Mutual CSS support must be the norm.

The higher headquarters of both these scout units must be charged with ensuring that coordination is conducted, drills are rehearsed with each other, information and cross-talk is continuous, and that the plan has them tied into each other to allow battle handoff. Training should be regularly planned to exercise this coordination and mission execution. Other common training should be done together as well, such as gunnery and simulation exercises.

Brigade reconnaissance symposiums to standardize operating procedures and present new ideas should be held semi-annually, at a minimum. The forum should allow free expression and creative, out-of-the-box thinking. The focus will always be on how to conduct better reconnaissance, ensure survivability, and achieve mission success. The scout

SOP is a living document and should be constantly refined. These symposiums will allow dissemination of these refinements. SOPs should be annotated and refinements noted until the updates are published, then the process starts all over again. Although there is little written here on coordination, it is one of the most critical aspects of success in the reconnaissance fight. With all the assets now in the reconnaissance battlespace, poor coordination may prove fatal.

### **Maximize Dismounted Scouts**

Dismounted scout teams have proven very successful in all environments. Conduct dismounted training regularly, in all environments, under numerous conditions, to develop the standardization and confidence needed to conduct dismounted operations. Dismounted operations are common in Stability And Support Operations. The frequency of these operations has greatly increased Army-wide, creating a greater need to sustain dismounted skills.

Dismounted teams should be designated in each section, and they should be ready to dismount at a moment's notice. Their equipment is pre-packed with an emphasis on sustaining survivability and communications. These teams must constantly dismount and clear forward of their vehicles to prevent enemy observation. There may be times that dismounted teams will virtually ground-guide their vehicles, while infiltrating, to prevent detection. Dismount teams or sniper teams can dismount, and establish themselves on dominant terrain, acting as overwatch for both mounted and dismounted operations. Dismounted teams are sent out every time a section gets set. This will provide redundancy within the section on its NAI.

This dismounted team may have the follow-on mission to move deeper into sector to cover subsequent NAIs without compromising vehicles. These teams may also act as overwatch for their own section's vehicles as they displace to their subsequent NAIs. These teams also increase the overall operational capability of the platoons. Unlike OPs, these teams are not at a fixed location relying on constant resupply from their vehicles. They are an independent, self-sustaining team that work like the highly successful OPFOR DRT teams of the National Training Center. To meet the capabilities stated above, the manpower must be adjusted



as discussed in the manning section of this article.

Sniper team employment has proved a formidable overwatching force. Sniper teams provide security in depth and a well camouflaged OP that can gather intelligence of an area of operation prior to committing the units that the sniper team will overwatch. The use of sniper teams has been more frequent since the increase in Stability And Support Operations. One example of employing these scout snipers is when they provide cover to soldiers conducting peacekeeping operations. These soldiers must work in close proximity to the local population. The snipers provide overwatching security without alarming the non-combatants.

These additional dismount teams will increase overall survivability of scouts in the area of operation and provide the capability to conduct stay-behind operations or shift teams that are already in depth with minimal signature and risk of detection.

We must be creative in how we infiltrate and resupply our mounted and dismounted scouts. For dismounted operations, maintenance helicopters are sometimes available when others are not. OH-58 scout helicopters conducting reconnaissance in sector can conduct poncho parachute drops to resupply dismounts in sector. Supplies can be cached to allow self-resupply or resupply for stay-behind forces. Resupply can also be done by mounted scouts carrying three-day packages. Supplies are cross-leveled to those scouts staying in the area of operation prior to the vehicle moving to the resupply point. Resupply packages, called push packages, should already be assembled and ready to be pushed forward at a moment's notice. This package can be an independent LOGPAC, or it can be pushed forward with the LOGPAC of the lead company team, and this company team can provide security as the scouts resupply and prep for follow-on operations. Coordination with the company team ISGs is critical for emergency resupply.

Dismounted teams must maximize the use of equipment that will increase their survivability and success. Ghillie suits are great for concealment and can be made by the soldiers using burlap sandbags. Thermal blankets are light weight and can reduce thermal signature and help prevent detection from

thermal sights of enemy aircraft or vehicles.

Specialized training should be conducted to increase survivability and success in dismounted operations. Schools that support these operations are Ranger School, Sniper Course, Air Assault School, Pathfinder School, and the Long Range Surveillance Unit (LRSU) Course.

Scouts will always need to dismount, if for no other reason than to clear a danger area forward of their vehicle. Dismounted scouts have a greater survivability rate and must be maximized. Training must focus on dismounted operations and standardizing how these operations are conducted. Dismounted training is also an inexpensive way to train the fundamentals and develop standard operating procedures.

### Training

Training must be done using task, condition, and standards. Planning training with the crawl, walk, run technique allows everyone to progress together. Crawl and walk training should be constantly critiqued during and after the training. When training is being conducted at a run, it should always be evaluated, preferably by an external source, to allow multiple perspectives. All training, and everything else done by the soldiers, must be done with combat in mind. A warfighting focus is a must. We train how we fight; we fight how we trained.

We must retrain the basics. Although thinking outside the box must be encouraged, an understanding of the basics is a must in order to develop new TTPs.

Throughout history, poor land navigation has proved deadly to scouts, whether it was inaccurate location reporting for indirect fire or veering off course and maneuvering across the front of a flank unit without coordination, as in Desert Storm. We must constantly train land navigation without the aid of navigational equipment. Scouts must be prepared to use any technique of navigation. Once these skills are perfected, then we must teach the use of navigational aids. Scouts must learn how to maximize all their navigational tools.

Also, we must constantly practice reporting procedures. A recommended change to the contact report is adding *location* to identification, direction, and

enemy type. The location does not need to be precise; it just needs to give a general location in the event support begins moving that way or communications are lost after the initial report. This must be drilled until it is second nature. This report should be followed up with a SALT-Y (Your actions and recommendations) report that is clear and precise. Always report exactly what is seen. As these reports begin to get pushed up, all scouts must be prepared to paint the picture of the battlefield to the commander.

Training emphasis should be placed on basic crew level drills such as establishing an OP, actions in response to the seven forms of contact (mounted and dismounted), and moving tactically mounted or dismounted. Standardize these and other basic drills and regularly rehearse and evaluate them in detail. Capture or death is imminent if drills like actions on contact are not automatic.

Training teamwork and cohesiveness is also critical. Teamwork develops trust and confidence among soldiers. It develops mutual support to overcome each other's weaknesses, and ensures a formidable team capable of overcoming any task or mission.

Scouts must be trained to constantly find ways to support their task force and brigade combat team, even if they meet their reconnaissance objective. Any soldier on the battlefield can be the combat multiplier that ensures victory. All scouts must understand the commander's intent, and the plan of how the battle is to unfold. He must know how to use all his combat multipliers to help influence the battle. This can be done by guiding air assets onto targets, or marking targets with direct fire for tanks and Bradleys to identify and destroy. Scouts can also screen task force and brigade combat team movement by dropping smoke and indirect fires on threat targets such as antitank ambushes. Scout snipers engaging vehicle commanders and possible key leaders will also add to the battlefield confusion. Scouts must maintain battlefield awareness so they can talk directly to the company teams or platoons about to make contact in order to give timely reports and talk them onto targets.

Training should also include coordination with those battlefield multipliers that support the reconnaissance fight. The use of mortars to conduct mortar raids is an example of this. Terrain such

as the National Training Center and Korea can reduce the effectiveness of artillery and MLRS. The extreme angles of the hills and mountains and the inability of artillery to strike the reverse slope of this high ground provides cover for the enemy. There may also be times that artillery and MLRS are not available. To overcome these shortfalls, mortars can conduct a raid.

An example of this use at the National Training Center would be scouts identifying a task force still in their trucks in 114 wadi, behind the Iron Triangle. Because the brigade combat team and artillery are at the far eastern end of the central corridor, the artillery cannot hit this area behind the mountain. The mortars dismount their tubes from their vehicles and sling load them under helicopters into the battlespace. They set up on the opposite side of the valley from the enemy contact in a hide position, which allows virtual line of sight and prevents the mountain from acting as cover.

Some of the mortars provide immediate security, and scouts in the area provide security as well. Mortars fire their mission and the scout team, observing the enemy, conducts battle damage assessment. The mortars are then air-extracted, the enemy are destroyed, and the entire fire mission took only 8-10 minutes total. This operation applies to virtually any environment world-wide. Mortars should regularly rehearse this type of operation with scouts and it should be standardized and published in the unit's standard operating procedures.

Hand-to-hand combat training should be a regular part of the training schedule. It is not only a weapon and a war-fighting skill, but a confidence and morale builder that helps develop the war-fighter spirit and focus, and it is a great program to incorporate into the current physical fitness program.

Training is the cornerstone to success on the battlefield. How we train is how we fight.

## Gunnery

We must re-teach the basics of gunnery with a focus on the fundamentals, such as the eight steady-hold factors for the M-16. Precision marksmanship should be the only firing done until the soldier develops the skill to consistently make tight shot groups. This ensures his understanding of the funda-

mentals and will likely increase his capabilities overall.

A gunnery density should be developed that includes every individual and crew-served weapon, as well as hand grenades, demolitions, and hand-to-hand combat. Primary marksmanship and gunnery skills training and testing for each weapon must be completed prior to shooting. This training and testing must be hands-on and written. Ensuring these fundamentals are understood prior to going to the range prevents this training from taking away from range time. Everyone in the scout platoons should receive this training, whatever their position, so that everyone is familiar with all the weapon systems and is capable of using them in emergency situations. Once the basics are mastered, gunnery skills must be brought to the next level.

Training should consider employment of each weapon in all environments, including MOUT. We must maximize the use of every weapon, for example using the MK 19 as an indirect weapon. Gunners will fire weapons from range card information in limited visibility with the observer OP being the only one that can visually identify the targets and call corrections. Other examples are hand-held laser designators marking targets to be engaged, and making field-expedient bangalores from C-4 and pickets, to create hasty or stealth breaches. Live-fire training should also reflect realistic scenarios that scouts may face, such as surprise meeting engagements while mounted, a dismounted squad breaking contact, or engaging targets with non-combatants intermixed with threat targets (yet another lesson learned in Somalia). Multiple weapon systems should be used simultaneously, for example a dismounted squad or OP breaking contact with individual and crew-served weapons while their vehicle calls indirect fires and provides suppressive fires for their displacement. This type of training should be multi-echelon as well. For example, scouts identify the enemy moving in sector during a counter-reconnaissance operation, but the enemy is too close to use indirect fires. The scout calls forward the supporting tank or Bradley unit. Once they are in position, the scout marks the enemy with direct fire and the supporting unit identifies and destroys the enemy. This can be done with air assets too. Scouts should refine their skills with their primary weapon system during gunnery as

well, calling indirect fire. Every scout must know how to plan indirect fires to support their reconnaissance operations or OPs. They must know how to register illumination, develop triggers, and pre-plot linear sheaths on main avenues of approach. Scouts should also be trained in the use of a GLLD. Small arms training should include training with night sights in limited visibility, as well as scopes in daylight, engaging at long range, and training overwatch/covering teams.

Gunnery training should start with small arms training and qualification developing into mounted gunnery. Maneuver training should parallel gunnery, starting with individual and crew-level drills and developing into platoon-level drills such as platoon actions at an obstacle. These two training focuses should conclude with exercises that combine both: A squad and section live-fire, mounted and dismounted, that exercises actions on contact and a platoon-level live-fire that integrates other battlefield multipliers, such as artillery, mortars, and task force or brigade combat team assets as previously mentioned. CASEVAC should also be exercised under these realistic conditions.

## Critical Equipment

The scout platoon should be self-supportive in the area of operation for at least 72 hours. Scout platoons should be supplied for three days of continuous operations. Every HMMWV should have four 5-gallon water cans, two 5-gallon fuel cans, and three day's worth of MREs. CFVs will require more because of larger crews. This will also allow scouts to cross-level and resupply stay-behind teams and dismounted teams moving further in depth. Some of these extra items can be carried externally on the HMMWV on racks mounted on the back of the vehicles.

Unique supplies should be purchased to sustain the operational tempo of the scout platoon. Because the platoon does not normally LOGPAC for three days, each vehicle should have a stove to heat meals and water when the opportunity is available. Each vehicle should have Thermoses as well. Items like Gatorade and vitamins should be considered to replenish minerals and electrolytes lost in continuous operations. Other items previously discussed are lightweight thermal blankets and ghillie suits.

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*Retrans teams in scout platoons will allow scouts to focus on obtaining the best eyes on their NAIs instead of finding the location that allows the best communications.*

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TO&E operational equipment is a large problem in today's scout platoon. As already stated, inadequate optics on the HMMWVs force scouts to get so close to the enemy that indirect fires cannot be used to break contact. In some cases, this takes away their primary weapon system. Advanced optics are slowly filtering into the Army inventories, but spotter scopes, telescopes, and scopes for individual weapons can be purchased now to bridge this shortfall. A stabilized weapon with a scope on it greatly increases daytime optics. M-4 carbines must be issued to scouts, along with sniper rifles and MP-5 submachine guns, or some other small, lightweight machine gun for operations in MOUT and SASO type operations. The M240B machine gun is a great weapon, but it's too large and heavy for extended dismounted operations or MOUT and SASO operations. Another problem is that modern scout platoons are reconnoitering for an armored force, yet, without CFVs, they do not have the capability to defeat heavy armor in a meeting engagement to allow them to break contact. This problem can be solved by adding CFVs to the task force scout platoons and putting Javelins, or some other type of AT weapon, on the HMMWVs. Scouts also need hand-held laser designators to mark targets so that supporting units, air or ground, can destroy them. This will be very beneficial in the counter-reconnaissance fight.

Sling load equipment should be part of the load plan on all HMMWVs. This equipment will not only help in insertion and extraction, but in aerial resupply as well.

Communication is absolutely critical to mission success. Scout platoon vehicles must have two radios, and each section needs another radio in the man-packs to support the dismounted teams. Scout sections should have SATCOM capability also. Hands-free communication is also needed between dismounts and can also be used by HMMWV commanders to communicate with their gunners. Non-secure, hand-held radios, like Motorola Walkabouts with ear pieces, work well to resolve this problem. They are light, small, and easy to use. Radio discipline must ensure that

no secure information is passed on these radios.

Equipment is critical to survivability and mission success. Although the Army has a lot of great equipment on the way, we must find ways to bridge the gap until this new equipment is fielded.

### **Retrans Teams Organic To Scout Platoons**

Retrans teams in scout platoons will allow scouts to focus on obtaining the best eyes on their NAIs instead of finding the location that allows the best communications. The brigade reconnaissance troop should have a retrans team in each platoon. If the task force scout platoon or brigade reconnaissance troop commander is forced to develop a plan around communications, reconnaissance assets are lost to the retrans mission or, the commander is not getting the most from his intelligence gatherers.

Having the retrans team organic to the scout platoon will also allow the team to be trained in infiltration and scouting techniques, thus increasing their survivability. They must always be part of the R&S planning process and may have a follow-on mission to retrans for the task force or brigade combat team as they move into sector.

Employment of the retrans team needs to be creative as well. In brigade operations, task forces may be conducting operations on line. METT-TC may dictate that, in this type of operation, the retrans team working for the flanking task force may be able to provide better retrans capability than their own. The terrain at the National Training Center is a good example of this type of environment. Retrans teams on the high ground of the opposite side of the valley from the scouts in sector may give them greater retrans success. A retrans team on the opposite wall has a greater line of sight with the scouts operating in sector, increasing successful communication, versus retrans in depth with limited line of sight. Coordinate with the flanking task force to successfully execute this mission. Scouts operating in depth must be prepared to support communications, whether relaying

information or acting as a retrans site. All scouts should have retrans cables. It is critical that scouts not be tasked with retrans as their only mission; this will cause the loss of an invaluable reconnaissance asset. The loss of a single scout to such a mission can seriously affect the successful execution of the R&S plan.

R&S planning must consider communications, but they should focus on the reconnaissance objective, not purely communications. On the other hand, a scout that cannot communicate is no longer an asset to his commander.

### **Maintenance Support**

As already stated, to increase operational readiness, a vehicle mechanic should be permanently attached to the task force scout platoons and cross-trained. If a mechanic is not in the platoons of the brigade reconnaissance troop, there should be one as the 1SG's driver to act as the forward maintenance contact for the troop. The 1SG should be on an LAV-type vehicle to allow more room for equipment and armor protection for CASEVAC and maintenance support forward.

The mechanics should have a Battle Damage Repair kit to perform repairs on vehicles that are still deployed in the area of operation. Some of the items in the kit could be tire patch kits, fuel tank patch kits, CV boots, spare belts, glow plugs, and so on. The mechanic will also verify 5988s and parts requests before they are pushed back to ensure accuracy while sustaining operations. The mechanic will also install parts pushed forward when time permits. All of this will increase operational readiness and facilitate accurate maintenance reporting.

Scout vehicles should have the highest priority in maintenance while deployed in operations because of their continuous operations. There must be minimal maintenance downtime due to the limited number of scout vehicles already available. The loss of a single vehicle and crew can be devastating to a reconnaissance mission. The level of priority while deployed should be so high that the scout platoon mechanic can go to

the nearest unit and take the parts needed to sustain vehicle operations.

Having the platoon sergeant on a CFV for task force scouts and the ISG on a LAV-type vehicle in the brigade reconnaissance troop will greatly increase maintenance and recovery support. A tow bar can be easily secured to these vehicles, but not to a HMMWV. These vehicles also have room to carry the Battle Damage Repair kit and other assets needing to be pushed forward to the scout platoons. The CFV can negotiate terrain that the HMMWV cannot, and both the CFV and the LAV will increase recovery capability. This will allow greater self-recovery and prevent non-organic recovery assets from being pushed forward into the reconnaissance battlespace, or worse yet, the loss of a reconnaissance asset for the R&S fight until a task force pushes forward to their location.

If a scout vehicle must be pushed back for maintenance, every effort must be made to replace that vehicle. If this is not possible, then most, if not all of the crew, must remain forward conducting operations. These crews can be infiltrated into the area of operation as dismounted teams. They can also be cross-leveled into the other sections to beef them up to support mounted and dismounted operations. All key equipment, like extra communications, optics, ammo, and rations need to be cross-leveled from the downed vehicle and distributed to the other scouts when time permits. These resources will be needed to support the soldiers operating forward.

### CASEVAC

A CSS overlay must be made and disseminated to each vehicle, higher command, and anyone else who is part of the coordination. The CSS overlay should have the Main Supply Routes, Casualty Collection Points, and Logistical Release Points. It should also have the infiltration routes to each OP for CASEVAC and emergency resupply purposes. This will give supporting units preplanned infiltration routes. The scouts already forward in sector will also have an idea which way the support is coming from, so they can provide overwatch for them. These routes should be numbered to prevent confusion in coordination. It is also important that the scouts already in sector inform the supporting effort which route was successfully used so they can capitalize on this success. CASEVAC is part of the R&S plan and

designates which units will support the CASEVAC throughout each phase of the operation. The supporting effort is usually the unit closest to the forward elements. Face-to-face coordination with each supporting unit must be made by the scout unit going forward. Time is always limited, so the task force platoon sergeant or brigade reconnaissance troop ISG should anticipate this coordination and start this process immediately. The platoon sergeant/ISG continues to develop the CSS overlay during coordination. He also continues to collect the information for paragraph's four and five of the operations order. When the operations order is given, the platoon sergeant/ISG gives these two paragraphs to the platoon leader, allowing him to focus on the tactical aspects of the mission. Requested indirect fire support can also be coordinated by the senior scout, once approved by the platoon leader, to allow the platoon leader time for his meetings and tactical planning.

The task force scout platoon sergeant's CFV, or the brigade reconnaissance troop ISG's LAV, provides some armor protection while conducting casualty evacuation, whereas the HMMWV provides very little. Since there is also a greater likelihood of contact when moving to conduct casualty evacuations, the CFV and LAV provide greater firepower to survive this contact, and can lay suppressive fires, if need be, to execute the evacuation. These vehicles also have the room inside to support CASEVAC, as opposed to the HMMWV. All of these shortfalls proved to be critical when evacuating casualties while in contact in Mogadishu, Somalia.

In the event that another unit pushes MEDEVAC assets forward to scouts that had contact, tank, Bradley, or helicopter gunship escorts should always be planned and used. Air evacuations must also be maximized. The nine-line MEDEVAC request format should be mounted by the radio on every vehicle. All scouts must be able to establish a landing zone and be able to secure it.

There should also be at least one combat lifesaver with a combat lifesaver bag on every scout vehicle. Ideally, every scout will be a combat lifesaver. Scouts should periodically practice giving one another IVs while conducting training as well; this will reinforce their combat lifesaver training and develop a trust in each other's abilities.

### Conclusion

This article was not written to be the cure-all of all the problems in the reconnaissance community. My intent is to share ideas that have proved successful for me as a task force scout platoon sergeant. I feel we are on track developing the reconnaissance force of the future; my only concern is that we do not become too dependent on artificial intelligence gatherers. The lack of human intelligence (HUMINT) and the reliance on other intelligence sources in the late 1970s and early 1980s caused great confusion on several operations, such as the Panama invasion, Grenada, and the Iranian hostage rescue attempt. The reliance on battlefield shapers like air and artillery before the direct fight, also require reconnaissance forward to identify these targets, assess battle damage and enemy disposition continuously. Then, once the task force or brigade combat team commits to the battlespace, reconnaissance assets must talk these forces onto targets and conduct reconnaissance pull to allow survivability and success on the battlefield. Artificial intelligence gatherers cannot paint this kind of picture and recommend courses of action. We must never forget: Those who win the reconnaissance fight tend to win the battle as well.

*I would like to thank COL John B. Musser II for teaching me, long ago, to think outside the box, and LTC John M. Tisson for allowing me to work that way.*

SFC Frank R. Belonus enlisted in the Army in 1986 as a 19D Scout. His assignments include 5-73rd Armor and 1-10th Cavalry, 194th Armored Brigade, Ft. Knox, Ky.; 3/11th ACR, Germany; 2-9th Cavalry, 7th ID (L), Ft. Ord, Calif.; 1-4th Cavalry, 1st ID (M), Ft. Riley, Kan.; Seattle Recruiting Battalion; and scout platoon sergeant of 1-34th Armor, Ft. Riley, Kan. He has attended PLDC, BNCOC, ANCOC, Master Gunner School, Pathfinder School, Air Assault School, NBC School, and MANPADS School. He is currently senior developer/writer for cavalry platoon maneuver doctrine, Platoon/Gunnery Doctrine Branch, Directorate of Training and Doctrine Development, Ft. Knox.



With the Russians waiting out this arms show for their own, in Russia later in the year, the emphasis was not on tanks, although the U.S., the Germans, and the French showed their best. The U.S. M1A2 SEP, above, was there, as was the German Leo IIA6, upper right, and the new French MBT, the Leclerc, at right.



## EUROSATORY 2000

# Upgrade Packages Dominate French Arms Show

by Major Dave Daigle, Editor-in-Chief

This year's edition of Eurosatory 2000, the French biennial armament exhibition, included little that was new in the way of tanks, probably because the scheduling conflicted with a Russian show a few weeks later at Nizhny Taghil and the Russians saved their surprises for that exhibition.

But tank upgrade packages drew a lot of attention from nations seeking less expensive solutions to their armor needs. The upgrade packages included power plant, fire control, and protection improvements for T-72s, T-55s, and BMPs. The number of companies engaged in producing upgrade packages seems to be growing rapidly, probably a reaction to the high cost of buying new and the reality that these nations already own quantities of older equip-

ment. The used armor business is also flourishing: one sales representative said his firm had recently completed a sale of 100 reconditioned T-55s and were offering a similar upgrade package for the T-72.

Eurosatory takes place at the Le Bourget exhibition site outside Paris, the airfield where Charles Lindbergh landed after his historic crossing of the Atlantic.

The five-day exhibition, held every two years, is a veritable hyper-mart for defense shoppers. This year, arms manufacturers, potential customers, defense trade insiders, and assorted protestors were among the 40,000 who came to the show to see more than 800 exhibits from 39 countries.

The Israelis brought their Merkava III, showing this model for the first time outside Israel. Meanwhile, the follow-up to that model was undergoing testing. According to an IDF spokesman, the Merkava IV will be upgraded with a 1,500-hp MTU diesel and an improved armor package, the latter taking advantage of the Merkava's modular armor suite that was designed to be upgraded as threats changed.

Other major, new-generation tanks on view were the French Leclerc, the German Leopard 2A6, and the newest version of the U.S. M1-series, the M1A2 SEP, now being fielded at Fort Hood by the 4th ID's 67th Armor. The SEP tank incorporates a new-generation forward-looking infrared thermal sights for engagements at longer





One post-Cold War hybrid seen at the show was the Czech VOP-026, above, a BMP-2 chassis with a Bushmaster 30mm turret. The Israelis showed their Merkava MkIII, at right, although a newer model with a 1,500 hp engine was under test in Israel.



Several firms were at the show offering upgrade packages for older tanks, like the T-72 at left.

The recent emphasis on peacekeeping, and the inevitable exposure of soldiers to mines in those situations, has spurred new solutions, although the German Keiler mine-clearing system, above, somewhat resembles the WWII-era "Flail" tanks developed by the British. The weights at the ends of the chains spin around and beat the ground ahead, setting off any mines.

France also showed the recovery version of their new Leclerc MBT, at left.

ranges and also is fitted with improved microprocessors, additional memory to accommodate battle-command software, and digitized color mapping cartridges for use with other Force XXI digital platforms.

A new driver's display linked to the Global Positioning System (GPS) provides navigational information and direction with a "steer-to" feature intended to cue the driver so that he requires fewer directions from the tank commander.

The U.S. pavilion also displayed the newest M2 Bradley, the M56 Coyote smoke generator, the HEMTT (Heavy Expanded Mobility Tactical Truck), and the 5-ton truck from the Family of Medium Tactical Vehicles (FMTV). The U.S. delegation included General John N. Abrams, CG Training and Doctrine Command, who spoke on the new interim brigades now being developed at Fort Lewis, Wash. He stressed that the brigades were combined arms units that might have an armor or an infantry officer in command, and that could be

employed in many functions. The concept, he said, was to create a brigade unit capable of operating over 100 miles a day, logistically supported by a strategic "air bridge."

GEN Abrams also touched on the Future Combat System (FCS) and the track-versus-wheel debate, noting that advances in the technology of wheel-based platforms might allow consideration of a wheeled FCS when the decision is made to build this vehicle in the future.

# Proposed 120mm Tank Round Would Regain Antipersonnel Capability

by Lieutenant Colonel David W. Pride

*"GUNNER...CANISTER...TROOPS!"*

U.S. tank commanders have not barked a canister fire command in combat for many years, but if a new development is funded, they may soon be firing canister rounds from their 120mm cannons.

Developed over 200 years ago for artillery, canister was adopted for tank use before WWII. Canister provides tanks with a lethal anti-personnel/materiel capability that machine guns cannot. When canister is fired, hundreds of small sub-projectiles are launched in a shotgun-like blast. Canister has no fuze, thus its payload disperses immediately after exiting the muzzle of the tank's main gun. Such rounds were once part of the tank's basic load.

Last used in combat during the Vietnam War, armor and cavalry units equipped with M48A3 tanks and M551 Sheridans regularly used canister rounds to kill enemy soldiers exposed in the open and those protected by bunkers, dense jungle foliage, and darkness.<sup>1</sup>

When the M1A1 and its 120mm gun were fielded in 1986, the active component began losing its tank-fired anti-personnel capability. In 1995, the forward deployed 2ID lost its antipersonnel round capability when 120mm-equipped M1A1s replaced their 105mm IPM1s that fired the old APERS round. Finally, in 1997, when 3-73 Armor's M551 Sheridans were deactivated, the Army lost its only canister-capable unit.

Today, 10-plus years after the Cold War ended, our M1A1 and M1A2 tanks are still unable to provide rapid, effective, close-in lethal fire against massed assaulting infantry armed with anti-tank weapons. This deficiency, coupled with limited side armor protection of the Abrams, reduces the tank's survivability and impacts the effectiveness of the infantry it supports.

Soon, if the Armor Center is successful, the canister situation will change. Army transformation, the changing operational environment, and an urgent

request from the field all contribute to the immediate need for a canister round for the 120mm Abrams fleet.

## The Mission Need

In December 1999, U.S. Forces, Korea (USFK) sent a Theater Urgency of Need Statement to the Army's Office of the Deputy Chief of Staff for Operations – Force Development (ODCS-OPS-FD) requesting the immediate procurement of 120mm, close range, anti-personnel ammunition for M1A1/M1A2 tanks. USFK requires their tank force have the capability to quickly and effectively defeat close-in infantry threats. This serious request from an Army CINC cannot go unanswered.

USFK's request came at a time when the Armor Center was mulling over the new operational environment confronting our mounted forces. The new strategic framework created by Army transformation compelled the Armor Center to review its mechanized force modernization strategy. During the development of the 2000 Mechanized Force Modernization Plan (MFMP) the canister requirement emerged as a top priority. The Armor Center, in response to the force's changing environment and USFK's request for assistance, developed an Operational Requirements Document (ORD) to formally articulate the Armor Force's need for a 120mm canister round.<sup>2</sup>

## Historical Precedents

Cannon-fired canister rounds are not a new concept. Canister was used during the U.S. Revolutionary War by naval and ground forces. During the U.S. Civil War, both sides used artillery-fired canister to break up enemy formations of attacking infantry and cavalry. Respected by infantry and artillery alike, the direct fire artillery canister load was then known as "grape shot," because of the many small steel balls housed within the can-shaped projectile.

Tank-fired anti-personnel rounds are not new, either. At the start of WWII,

M2/M3 tanks mounting 37mm guns stored canister rounds as part of their basic load. Unfortunately, not much is found in WWII historical files about the use of canister in Army combat operations. Most of the Army's European and North African Theater battle reports reference armor-piercing and high explosive tank ammunition.

However, in the Pacific Theater of Operation, there is evidence that USMC tanks fired canister to clear underbrush and defeat enemy infantry. On August 21, 1942, during the Battle of the Tenaru (Guadalcanal Campaign), a USMC tank platoon of M3s was credited with using shock action and 37mm canister to terminate the vicious battle.<sup>3</sup> The 37mm canister round contained approximately 122 steel balls.<sup>4</sup>

During the Korean War, the Army and Marine Corps used several different types of tanks, each with varying-sized guns (75mm, 76mm, 90mm), but little is found in historical literature about the use of canister in Korea.<sup>5</sup> A 76mm and 90mm canister round were developed in the early 1950s; however, it is unknown if they were used in Korea. The 76mm canister contained 9 lbs of heavy steel balls, similar in size to "double-aught" buck shot.<sup>6</sup> When fired, the propelling gases forced the steel balls out of the tank's main gun, instantly creating a lethal cone of destruction from the muzzle outward. While there is little historical literature on the use of tank-fired canister in WWII and the Korean War, this is not the case for evidence of canister's use during the Vietnam War.

In Vietnam, U.S. units equipped with M48A3 tanks (90mm) and Sheridans (152mm) regularly used canister rounds to defeat enemy troops. As much as 50 percent of their basic load would consist of canister. In Vietnam, our armored forces employed canister in a wide range of roles during both offensive and defensive operations. The primary role of canister during the Vietnam War was to kill large numbers of exposed enemy personnel with a single



## CANISTER...Past and Present



Three examples of U.S. canister rounds, including the 90mm used in Vietnam, far left, the 152mm Sheridan "Beehive Round," center, and the proposed 120mm round, at right.

The new canister round would contain steel balls, flechettes, and pellets, as shown in the photo above.

shotgun-like blast. Canister was also used in a "recon-by-fire" role. Its lethal payload, when released into the jungle foliage, destroyed or prematurely triggered enemy ambushes that were suspected, but not visible. When units established night defensive positions, tank and Sheridan forces intermittently fired canister into the jungle/wood lines in an effort to "harass and interdict" enemy probing patrols.

The anti-personnel effects of the canister round are excellent, and so are its deforestation qualities. Canister was often used to clear thick jungle foliage to improved mobility or create better fields of fire. The 90mm canister round (M336) used by M48A3 tanks contained 1,281 steel pellets. This equates to firing 14.9 lbs of ball bearings at 858 meters/second out to a maximum effective range of 183 meters.<sup>7</sup>

The 152mm canister round (M625) launched approximately 10,000 small, nail-sized darts called "flechettes" out of the Sheridan's short barrel. Launched at a muzzle velocity of 690 meters/second, the flechettes disintegrated everything in their path out to 400 meters.<sup>8</sup> Flechette-filled canister rounds were nicknamed "beehive" rounds because of the distinctive sound heard when the flechettes flew down range. Veteran tankers were partial to both the canister and beehive round for their individual qualities. When pressed to select one or the other, they preferred to keep both.<sup>9</sup>

Combat stories about the employment of canister in Vietnam are plentiful. The following are some anecdotes from various sources about the use of canister in Vietnam:

*On 2 December 1966, tankers of 1st Squadron, 11th Armored Cavalry, fighting near Suoi Cat in South Vietnam, used 90mm canister against the Viet Cong (VC) who ambushed the unit. A battlefield search the next morning revealed over a hundred dead VC. The rounds*

*not only killed troops, but destroyed an enemy 57mm recoilless rifle.*<sup>10</sup>

*On 20 March 1967, troops of the 3rd Squadron, 5th Cavalry near Ap Bau Bang used canister to kill enemy troops climbing on neighboring armored cavalry vehicles.*<sup>11</sup>

*On 10 March 1969, Troop A, 3rd Squadron, 4th Cavalry killed 40 North Vietnamese Army (NVA) soldiers and broke the attack. A historical study of the fight credits this incident with restoring some measure of soldier faith in the Sheridan after the vehicle had shown itself vulnerable to land mines.*<sup>12</sup>

*A tank from Bravo Company, 2-34 Armor, engaged a raft with 15 VC aboard. Employing 90mm canister, they destroyed the raft and killed all occupants.*<sup>13</sup>

The effects of canister are devastating. NVA soldiers respected armor forces because of canister's deadly effect. The canister round's awesome reputation as a lethal killer contributed enormously to the shock effect created by U.S. armor in Vietnam. So devastating were its effects that other U.S. weapons like the 90mm/106mm recoilless rifles and 105mm howitzer, all adopted a canister munition during the Vietnam War.

### APERS During the Cold War

In 1972, MG William R. Desobry, then CG of the Armor Center, was selected to head a task force to design a new main battle tank to replace the M60 series. Authors of the operational requirements were WWII veterans, and their wartime experiences heavily influenced the new tank's requirements, which ultimately lead to the development of the M1 Abrams tank.<sup>14</sup> Introduced first with a 105mm main gun, the M1 tank maintained a strong requirement for the long range APERS. The Army's APERS solution for 105mm-equipped tanks was the fuzed M494 Beehive round. Its effective range is

50-4400 meters. The 105mm Beehive, like the 152mm canister, also used flechettes. The 105mm Beehive, produced in the 1960s, satisfied the APERS requirement for the M60-series tanks, the M48A5 in Korea, and the defunct Armored Gun System (AGS).

When the M1A1 was fielded in 1986, no unique APERS round was required. The M1A1 was envisaged as a tank killer on the open, rolling terrain of Europe. For that reason, and because of the limited number of rounds the M1 would carry, the basic load of the M1A1 was exclusively made up of tank-killing ammunition. NATO allies did not invest the time or money on a special purpose APERS round for their 120mm fleet, nor did the U.S. Besides, the high explosive multi-purpose, M830 HEAT-MP and later the M830A1 MPAT rounds would satisfy the requirement to destroy secondary targets beyond machine gun range.

### Today's Canister Requirement

USFK's APERS requirement calls for an Abrams force with the capability to destroy massed infantry quickly, effectively, and at short range. The Armor Center took USFK's requirement and expanded it to satisfy other user needs. In July 2000, the Armor Center forwarded for approval the official 120mm canister operational requirements document, which outlines requirements for an anti-personnel capability enabling the Abrams tank to engage targets across the spectrum of conflict, from small-scale contingencies to major theaters of war.

The M1A1/M1A2 Abrams tank requires a simple, quick means of engaging massed infantry with an area weapon that provides a greater volume of fire than the tank's machine guns, or the organic weapons of friendly infantry operating in concert with tanks. The intent is to quickly suppress/neutralize threat infantry and to cause an adverse



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*“Despite growing interest and priority, the 120mm canister round remains unfunded in the current defense budget...”*

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psychological impact on the threat force. The canister round will facilitate decisive, dominant maneuver and provide an offensive form of force protection. In the offense, canister will be employed to immediately clear enemy dismounts and to break up hasty ambush sites in urban areas. In close, compartmentalized terrain, its employment includes clearing defiles, and halting infantry attacks and counterattacks. Canister will also be used to support friendly infantry assaults by providing cover by fire. In the defense, the canister round will stop massed dismounted infantry assaults. Additionally, the canister will enhance lethality of combined arms teams operating in an economy of force role or Tactical Combat Forces (TCF) operating in Rear Area Combat Operations (RACO).

### Canister Procurement Options

To procure the canister round, there are three main courses of action for the U.S. Army: procure an existing 120mm APERS cartridge from another army; partner with an ally to develop a canister round; or independently develop its own cartridge.

In 1999, the Armor Center, USFK, and the Tank-automotive and Armaments Command (TACOM) conducted a limited customer test of the existing Israeli APERS round. Tankers from 2ID evaluated the Israeli APERS round and determined it unsuitable for use. The tankers deemed the round too heavy, awkward to fuze, and difficult to quickly load during engagements. No other country has a 120mm APERS cartridge ready for purchase or test at this time, so procuring an existing 120mm APERS cartridge is not a viable consideration.

The German Army is working on a high explosive multi-purpose round with three modes (point, time and delay) for their Leopard II force. Unfortunately, the German cartridge will not be ready until 2005-06. Waiting that long is unacceptable, furthermore, the round would be expensive to acquire and require costly fire control modifications to the tank.

Developing our own canister round was the only viable option available. The Armament R&D Center (ARDEC) of TACOM, located at Picatinny Arse-

nal, N.J., has tested a low risk, inexpensive canister round that meets the Armor Force's requirement. ARDEC combined the lethal mechanisms of previously proven combat canister designs, and claims their solution can be developed quickly and inexpensively. Unfortunately, funds are not yet programmed for 120mm canister developmental work. The budget window of opportunity closed before the canister round had a chance to compete with other high priority Armor Center programs. However, should funds become available, ARDEC estimates a short two-year development and evaluation effort.

### Summary

Our “legacy force” of Abrams and Bradleys will be part of the maneuver force for 20-plus years. Firepower upgrades like the canister and tank extended range munition (TERM) are required to sustain our dominant overmatch as we transform. The emerging canister capability will contribute to the Army's goal of developing a more lethal, agile, and versatile force capable of full spectrum combat.

Despite growing interest and priority, the 120mm canister round remains unfunded in the current defense budget, but the Armor Center is optimistic that the canister requirement will be validated and funded during the next budget cycle. With adequate funding, Army and Marine active and reserve component tank forces could enjoy the canister capability as early as 2003. Meanwhile, the Armor Center continues to lean forward in the saddle on this issue and others as we prepare our Armor Force for 21st century, full spectrum land combat.

*The author would like to thank 2LT Daniel Murphy (USMC) and Mr. Don Owens from Picatinny Arsenal for their assistance in researching canister. A special thanks to the following Vietnam veterans whose first-hand experiences of canister influenced this article: COL(R) Dan Deter, COL(R) Gene Colgan, COL(R) Don Appler, LTC(R) Ted Sanford and MAJ(R) Mel Connor.*

### Notes

<sup>1</sup>The *Armor Magazine* article, “Sheridans in Panama,” Mar-Apr 1990, pp. 8-15, by CPT

Kevin J. Hammond and CPT Frank Sherman, never mentioned canister being fired during Operation Just Cause. They were, however, included in the basic load during that operation.

<sup>2</sup>An ORD is the definitive statement describing the operational capabilities needed to satisfy a mission need. It concisely states the User's minimum essential operational information needed for the acquisition of the materiel solution. Source: TRADOC Pamphlet 71-9, *Requirements Determination*, 1 Aug 98, p. 116.

<sup>3</sup>Constance Green, Harry C. Thomson, and Peter C. Roots, *The United States Army In World War II: The Technical Services: The Ordnance Department: Planning Munitions for War*, Washington, D.C., Office of the Chief of Military History, 1955, pp. 370-371.

<sup>4</sup>Frank O. Hough, Verle E. Ludwig, and Henry Shaw Jr., *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*, Vol. I, HQMC, Washington D.C., 1957, p. 269.

<sup>5</sup>Perhaps Korean War veterans groups can shed light on this topic as we honor the 50th anniversary of the war and the men and women who served.

<sup>6</sup>TM 43-0001-28, *Army Ammunition Data Sheets for Artillery Ammunition: Guns, Howitzers, Mortars, Recoiless Rifles, Grenade Launchers and Artillery Fuzes*, 25 April 1977.

<sup>7</sup>*Ibid.*, p. 2-48.

<sup>8</sup>*Ibid.*, p. 2-54.

<sup>9</sup>*Canister versus Beehive Ammunition*, Committee Studies Report, Office of the Director of Instruction, U.S. Army Armor School, Fort Knox, Ky., 1968.

<sup>10</sup>GEN Donn A. Starry, *Mounted Combat in Vietnam*, Department of the Army, Washington D.C., 1978, p. 78.

<sup>11</sup>*Ibid.*, p. 99.

<sup>12</sup>*Ibid.*, p. 144.

<sup>13</sup>Lieutenant General Bernard William Rogers, *Vietnam Studies: Cedar Falls – Junction City: A Turning Point of the Army*, Washington D.C., 1989, p. 46.

<sup>14</sup>George F. Hofmann and Don A. Starry, editors, *Camp Colt to Desert Storm*, University of Kentucky Press, Lexington, Ky., 1999, pp. 432-473.

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# CONVOY LIVE FIRE:

## Training the Support Platoon To Defend Itself in Ambushes

by Captain J.M. Pierre

The Logistics Package (LOG-PAC) convoy has the singular responsibility of ensuring that supplies move from the field trains to the Logistics Release Point (LRP). The convoy, however, is lightly armed and a high priority target for enemy forces in the rear. On the Korean peninsula, this problem is a focus for training support assets. All soldiers must be riflemen and must know the basics of fire and movement in order to defend themselves in the enemy "kill zone."

HHC, 2nd Battalion, 9th Infantry (Mechanized) trained its support platoon to react to convoy ambushes. This training started with basic soldier skills, then unit collective tasks, and finally training with live fire. This article covers the planning, preparation, and execution phases of our convoy live fire exercise and concludes with lessons learned.

### Planning

In this training exercise, the collective tasks which supported the 2-9 IN (M) METL per 7-94 MTP were:

- Prepare LOGPAC (7-3-1512),
- Execute LOGPAC (7-3-1513) and,
- Perform Tactical Road March (7-2-1301).

The last two were identified as our essential tasks, with critical tasks of react to ambush.

The scenario required the convoy to perform a tactical road march from the task force field trains to the LRP. In the process, a lightly equipped force ambushed the convoy. This scenario was modified to include an ambush with and without an obstacle. When unobstructed, the convoy was required to return fire and continue to move. With an obstacle that may not be bypassed, the convoy was required to perform a



SOSR (Suppress, Obscure, Secure, and Reduce) drill.

Our scenario required soldiers to execute a herringbone, dismount, and form a horseshoe from which to defend. A gun truck would move through the front of the convoy and lay down a base of fire while dismount teams moved to their firing positions and reduced the obstacle.

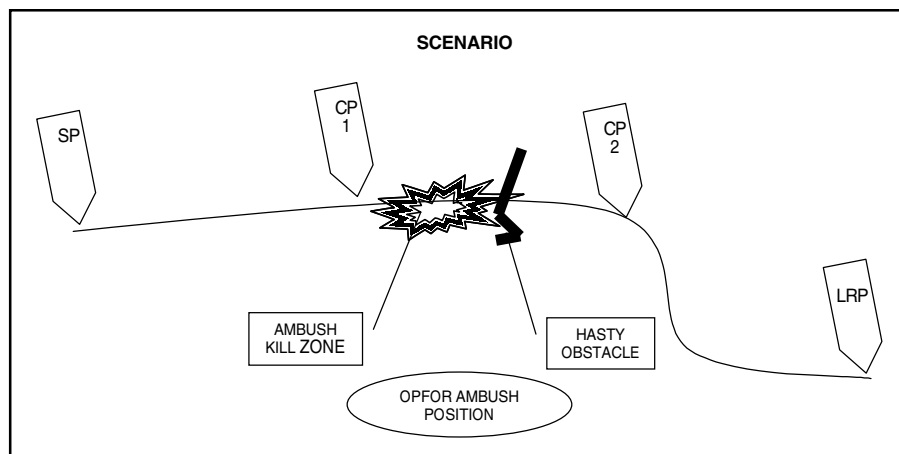
### Preparation

HHC, 2-9 IN (M) conducted a leader's reconnaissance of the Warrior Val-

ley range at the Korea Training Center. The range OIC, support platoon leader, and support platoon sergeant gained an understanding of the terrain and refined the scenario on the ground, concluding with a common vision of the firing lines and the target arrays. As surface danger zones (SDZ) of the range varied, we also ensured the range supported the ammunition the convoy carried. Finally, we validated and modified the scenario with range control.

Convoy live fire takes an entire day to train. 2-9 IN (M) programmed this training during the overall scheme of its gunnery density. HHC coordinated for the Warrior Valley range, the ammunition requirements, and a chow cycle that would support the absence of the support platoon. Soldiers were tasked to serve as the range OIC, NCOIC, ammunition NCO, and range safety/controllers — two for every firing line. A medical vehicle also followed the movement of the convoy.

Training up to the live fire began at the individual level. The prerequisite to shooting in this exercise was a current





weapons qualification. Soldiers who are out of tolerance could participate during the maneuver firing blanks, but could not shoot ball ammunition. Drivers were also trained to move and react under various conditions until they could drive off road at night and in NBC. Soldiers also learned to identify and mark mines and reduce obstacles using grappling hooks.

During the 2-9 IN (M) gunnery densities, the field trains were separated from the LRP by 10 kilometers. Our collective training emphasized “react to ambush” drills. With the assistance of an OPFOR, a “thinking enemy,” we rehearsed the same scenario we would use on the live range. This resulted in a heightened awareness of a threat to the convoy and allowed us to train tactics, techniques, and procedures for reactions to their ambushes.

### Execution

The convoy live fire day was conducted in three phases: dry fire, blank fire and validation, and live fire. We stressed the obstacle situation.

The dry fire phase was the most intensive part of the day. From the baseline, soldiers were oriented to the scenario and given the task and purpose of the training by the OIC. This was followed by a rock drill. Soldiers trained and retrained individual movement techniques, movement as a fire team, and also practiced throwing smoke grenades. The gun truck practiced moving through the convoy and engagement techniques. Simultaneously, the breach team practiced reducing the obstacle enough so that the largest vehicle could move through it. After the rock drill, soldiers ran through the scenario, followed by range safety personnel.

The blank fire phase repeated the same actions, but with blank ammunition. An intensive rock drill and dry run facilitated soldiers’ reactions in this phase — the time taken from the initial halt to the first vehicle leaving the kill zone was about 5-10 minutes. The most important lesson soldiers took from blank fire was to execute in the din of battlefield noise.

Blank fire was repeated at least twice. A successful second iteration validated the method for live fire. A prerequisite for live fire was that safety personnel certify their soldiers could properly dismount their vehicles, conduct movement to the firing line, and shoot. Sol-



**Troops practice obstacle reduction as part of counter-ambush drills. The log barrier will have to be reduced so that the largest vehicle will be able to pass.**

diers were disqualified if they failed to point their weapons at the ground during individual movement, failed to keep their weapons on safe, or failed to point their weapons up and down range on the firing line. An accidental discharge of a weapon was a cause of immediate disqualification.

In the live fire phase, the validation run was repeated with ball ammunition. After the obstacle was reduced, range safety personnel cleared shooters before they left their firing positions. Their clearance was necessary before soldiers could remount.

The culminating event for the HHC convoy live fire was its convoy escorted live fire iteration, with two Bradley Stinger Fighting Vehicles (BSFV) tasked as our convoy escorts. They provided the added protection of armor, a 25mm cannon, and a 7.62mm coax machine gun. One traveled in the front of the convoy and used its thermal sights to scan for targets; the second BSFV served as rear security. All other TTPs for this iteration remained the same except the need for a gun truck to move forward to suppress the enemy.

### Lessons Learned

- Always train React to Ambush drills. Our 88M and 77F soldiers often do not train to defend themselves. When soldiers have to be alert for ambushes, they do not give in to the mindset of the “Administrative LOGPAC.” This exercise generates soldier confi-

dence in his ability to hit targets outside the sanitized environment of the rifle range.

- Prior to executing the LOGPAC, check with the Military Police, if available, or the S2. Get an update of enemy activity in the task force rear area and when the MSR was last patrolled.

- Carry smoke as part of convoy load plan: preferably High Concentrate (HC) smoke. In case of an ambush, smoke grenades allow vehicles to obscure themselves from the enemy and are especially necessary if the convoy must reduce an obstacle. Colored smoke is also recommended as a visual recognition signal.

- Assign a breach team within the support platoon and train them to reduce wire/mine obstacles and log obstacles. Train them to identify booby traps and different types of surface laid mines. Ensure that they carry grappling hooks in order to reduce wire obstacles.

- Have an advance force travel 2-5 minutes ahead of the convoy. This force is in a HMMWV and consists of three to five soldiers with a squad automatic weapon (SAW) and grenade launcher. The advance force provides the convoy commander real time information on the condition of the MSR. If the main body is attacked, the advance force is in range to assist LOGPAC. When the convoy has a BSFV escort, there is no need for this advance force.



Convoy soldiers dismount to defend the column. The firing practice moved from a dry fire rehearsal to blank fire, then to live fire with close supervision for safety reasons.



- The convoy commander remains in radio contact with the field trains command post and/or the LRP. Further, the convoy commander is in radio contact with the mortar platoon. In case of an ambush, the mortars may be able to provide obscuration smoke and, if not danger close, high explosive rounds.

- Finally, the trains and LRP tracks the convoy from SP to RP and do a hand-over of the LOGPAC via radio.

### Training Aids

Training aids enhance training when they create the “effects of the battlefield.” For example:

- Artillery and hand grenade simulators were used to create the “sounds of the battlefield.” Trip flares and whistling devices were used as booby traps — these forced soldiers to thoroughly search obstacles.

- A MILES Fire-Back Device uses air to create the sound of a machine gun. Employed downrange, it is an effective way to create the effect of a live enemy

shooting at the convoy. It may also be used during the live fire.

- Target lift devices with E-type silhouettes were primarily used. An operator with the device remote control walked the lane and lifted targets on command. This reduced target confusion as the convoy moved through the range.

- Where lift devices could not be placed, E-type silhouettes were suspended at a 45-degree angle by cord and a balloon. Shooting the balloon caused the target to fall. This worked exceptionally well for training individual marksmanship fire control and fire distribution outside a qualification range.

- Uniforms on the targets further created the effect of a real enemy presenting himself.

- Video cameras recorded every action to allow us to dissect our TTPs at the AAR. Soldiers learned more quickly when they saw themselves making mistakes.

The threat situation on the Korean Peninsula requires task force logistics to train to defend themselves. They cannot assume that the enemy will only be forward of the LRP. Every soldier must be a rifleman.

The convoy live fire emphasizes this mentality in all its participants. There are many modifications of the HHC, 2-9 IN (M) convoy live fire model, yet the bottom line remains: the task force must be fed, refueled, and rearmed.

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CPT J.M. Pierre was commissioned an Armor Officer from the Fordham University ROTC program in 1992. He served as a tank platoon leader and company executive officer. After the Advanced Course, he commanded Alpha Company, 1-72d Armor and the HHC, 2-9th IN (M) at Camp Casey, South Korea. Currently, he serves as a cavalry troop trainer in 3-307th (TS)(eSB), South Carolina.



# Russian Army Route Reconnaissance: Key to Defeating the Chechen Ambush

by Adam Geibel

As the Second Chechen War began in September 1999 and swept across that Caucasian region's plains, Moscow's campaign against the mujihadeen began as a semi-conventional operation, the Russians pushing the defenders out of the towns and villages towards Grozny, the Chechen capital. After months of siege that would come to be called "the Third Battle of Grozny," the ruins fell to Russian forces in February 2000. The remaining Chechen units exfiltrated from that doomed city and sought refuge in southern Chechnya's mountains. From their hiding places, these mujihadeen were able to wage a guerrilla warfare throughout the winter.

The unconventional fighting that followed demonstrated once again the power of the well-planned, technologically-simple ambush and, conversely, how good air and ground reconnaissance can negate the effects of such attacks.

Journalist Viktor Sokirko, writing in the 26 April edition of *Moskovskiy Komсомоlet*, related the comments of a Russian Army reconnaissance captain in the mountains of Chechnya's Nozhay-Yurtovskiy region: "Now is the trickiest period of the whole operation in the North Caucasus. The gunmen have split up into small detachments and there is no longer the unbroken line of contact with them where the Army was able to use quite effectively heavy arms and aircraft. The Chechens now prefer to operate from ambush, harry the weak spots, and attack undefended convoys. They are using the so-called single-round tactic — after firing a single burst from an assault rifle, they immediately disappear amidst the 'greenery.' It is very hard to hit back and our casualties are more than high enough."

Based on tactics perfected during the First Chechen War (1994-96), the mujihadeen started laying ambushes triggered by command detonated mines. The 152mm HE round packed with several slabs of explosive was a favorite charge, usually initiated by wire or a



Sergey Snopkov/AFP file

**A Russian convoy cautiously moves down a road in Chechnya, where rebel ambushes have repeatedly savaged supply and replacement convoys.**

cell pager). This was followed by automatic weapons and RPG fire at extremely close range, allowing the Chechens to cause the maximum amount of damage and confusion.

Meanwhile, complacency had set in upon part of the Russian Federal command. Despite late March Russian estimates that 4,000 Chechen fighters were still operating in the southern Chechen mountains, and that 1,000 more had escaped back to the plains to blend in with the local population, Federal Interior Ministry unit commanders continued to be careless and failed to coordinate operations with the Army.

## OMON Mistakes

The first targets of the Chechens were Russian OMON (special-purpose police detachment) units, who were as much policemen as soldiers. They were generally tasked with "sweeping" villages for Chechen fighters. Mounted in trucks, with few AFVs of their own, the OMON were fish out of water on Chechnya's lonely highways.

Since they were also a separate entity not under the direct command of the

Army, OMON units and their command structures often failed to satisfy all of the convoy safety requirements. Russian Army rear area operations required that supply and replacement convoys, as well as units shifting position, coordinate their moves and be escorted with an appropriate number of light AFVs (generally BTR-70/80s or BRDM2s). The Army would provide reconnaissance patrols to clear the road ahead of the convoy, as well as coordinated fire support from batteries in range along the route and a constant escort of helicopter gunships (either Mi-8s or Mi-24s) overhead.

When they realized that OMON habitually failed to coordinate for the necessary Army support, the Chechens took notice and decisive action. In the space of one month, they executed three deadly command detonated mine ambushes. On 2 March, a 98-man Moscow-area OMON unit traveling in nine Ural soft-topped trucks was struck in Grozny. Casualty figures varied, with 20 to 37 KIA and 12 to 17 WIA. The unit commander, Colonel Dmitry Markelov, was one of the dead. Most of the trucks were destroyed or damaged.

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*“The use of reverse slopes meant that the first aviation group missed the hidden Chechens (probably from the long shadows, as it was late in the day) and only a second, trailing aviation group was able to engage them 10 minutes after the ambush started.”*

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On 29 March, an OMON column left Vedenov for a mission in the mountains and was ambushed near the village of Zhani-Vedenov. The result was 37 confirmed Russian KIAs, as well as two BTRs, two BMPs (from a relief column), and four trucks were confirmed destroyed.

On the evening of 5 April, a Nizhnevartovskiy OMON unit bringing replacements from the Khankala air base was hit on the road to Kurchalov. The Russians admitted to losing one KIA and eight WIA.

In all three cases, the OMON units were traveling without proper radio contact with Russian Army units along the route, had no fire support plan or forward observers with them, had no armored escort and no helicopters flying cover. Furthermore, OMON radios were commercial types available to the public, so the Chechens were able to monitor the Russian broadcasts that were invariably in the clear.

### **The Army At Serzhen-Yurt**

At 1400 on 23 April, a “rear (services) column” of the 51st Parachute Regiment, 106th (Tula) Airborne Division left the Russian base for Khankala. On a resupply mission to an airborne unit near Serzhen-Yurt, the Russians in the 22-vehicle convoy felt that they were safe enough.

Two combat convoys were on the road not too far ahead of them, fulfilling the requirement for route reconnaissance. The rear services convoy had its own combat reconnaissance patrol (a BMD and a BTR with a sapper squad) and reasonable protection — four BMDs and a ZU-23-2 AA gun mounted on a Ural truck. Furthermore, they were in direct radio contact with an artillery unit and had an Aviation Tactical Group (two Mi-24 gunships and an Mi-8 transport with 20 ‘spetsnaz’ troopers aboard) flying protective cover.

A 75-man Chechen unit had other ideas. Having identified the approaching target, they took up positions on the reverse slopes of a wooded gorge three km south of Serzhen-Yurt (about 25 km/16 miles southeast of Grozny).

While it is unclear whether the Chechen unit was able to maneuver away

from the reconnaissance patrols or simply hid from them, they were in place by 1730. The mujahideen attacked the column with 15 radio-controlled mines and sniper fire, along with a volley from grenade launchers and automatic weapons. The mujahideen said that they got as close as 15-20 meters to the Russian tanks and BMPs, then broke contact when the Russian “Hind” gunships started their rocket attacks. The result: (despite conflicting claims by both sides) 17 Russians confirmed KIA and 3 WIA, along with a fueler and five ammunition-laden trucks lost.

The use of reverse slopes meant that the first aviation group missed the hidden Chechens (probably from the long shadows, as it was late in the day) and only a second, trailing aviation group was able to engage them 10 minutes after the ambush started. “Hugging” the target so closely prevented the supporting artillery from firing effectively.

### **The Army At Yaryshmaryd**

Three days after the Chechen ambush near Serzhen-Yurt, the mujahideen struck again at Yaryshmaryd. This community, about 25 miles from Grozny, is near the mouth of the Argun Gorge, a strategic exfiltration route for the mujahideen. It was also the site of a spectacular Chechen ambush in April 1996, when, in the space of 15 minutes, Chechen field commanders Gelayev’s and Khattab’s units wiped out a 245th Mechanized Infantry Regiment rear convoy transporting food and fuel, killing 73 troops.

Another irony was that the Chechen National Guard held a two-week long tactical military exercise in the same area in early May, 1998. National Guard commander Magomed Khambiyev noted that his men had worked in “difficult conditions” on various combat tasks — a 10-km forced march, minefield breaching, crossing water obstacles, and grenade launcher and automatic arms field firing. (The targets were wrecked Russian AFVs left behind in 1996). Apparently, the Chechens used live minefields left over from the 1996 war for their breaching exercises.

The second time, the Russians were more prepared. The new Chechen “Kavkaz” web site reported that, at

1000 hrs, 25 April 2000, a 65-man unit under the command of Amir Yakub launched a classic ambush; first with mines and antitank weapons, followed by grenade launchers and mortars. They reported that the Russian column consisted of 30 vehicles — 15 tanks and infantry fighting vehicles, 10 URAL vehicles carrying ammunition, and five 120mm tracked mortars. The Chechens claimed to have forced the Russians to retreat to Duba-Yurt village, and that the Russians retaliated all day with artillery and air strikes on Yaryshmaryd and Ulus-Kert villages.

Chechen spokesman Movladi Udugov told AFP that “up to 30 soldiers and officers were killed” in the attack by 65 Chechen fighters, from a unit subordinate to field commander Shamil Basayev. He claimed only two Chechen fighters killed and four wounded in the 90-minute battle, while 10 out of 30 vehicles in the Russian column were destroyed. The Kavkaz web site listed four ammunition vehicles, two vehicles with mortars, two tanks and two infantry fighting vehicles destroyed.

The Russian version of the battle was that a 245th MRR reconnaissance battalion subunit and a motorized rifle company were on their way from Urus-Martan to Shatoy, tasked with an engineer and combat route reconnaissance. At 0950 hours, three km from the Volchi Gates (the entrance to the Argun Gorge) the Chechens opened fire on the convoy, using grenade launchers and automatic weapons.

The scouts and motorized riflemen instantly took up positions and returned fire, while the forward observers gave the coordinates to direct support artillery. Mi-24 helicopter gunships on station in the area launched missile strikes against the Chechens. In contrast to the Chechen claims, General Valery Manilov said the battle lasted just over an hour and only one Russian soldier was hurt. One infantry fighting vehicle sustained serious damage.

Neither of the successful Russian reactions deterred the mujahideen, or persuaded them to displace from the immediate area. A two-BTR Interior Ministry reconnaissance team ran into a 60-man force near Serzhen-Yurt on the 26th. This battle, which lasted 30 to 60 minutes until an Interior Ministry relief



## HATCH

from Page 5

column arrived, was one kilometer south of where the ambush of the 23rd had occurred. According to the Russians, they lost ten KIA (including Lieutenant Colonel Shevelyov, who was with the patrol) but took credit for 17-25 Chechens KIA. The mujihadeen would later figure 17-20 Russians KIA, two trucks and three AFVs destroyed with no friendly casualties.

The Chechens would claim that 130 Russians were KIA in the three actions near Serzhen-Yurt and Yaryshmary, with 28 vehicles destroyed (20 of them tanks, BMPs or BTRs), at the cost of two mujihadeen KIA and five WIA.

Despite the contradictory nature of these casualty reports, it was obvious that the Russian para-military units were continually getting the short end of the stick. What exactly saved the 245th's route reconnaissance patrol, when so many other Chechen ambushes had taken deadly advantage of Russian mistakes?

While press reports did not indicate whether the scouts expected imminent contact or not, they were far more mentally prepared for a fight on the road than their police comrades. Both Army units were also under coherent commands and following the standard operating procedures set down by the Russian Forces command. A functioning communications net allowed supporting arms to be brought to bear quickly, even though the mujihadeen had used every trick at their disposal.

Considering the popularity and effectiveness of the radio command-detached armor-killing mine to initiate ambushes on Chechnya's roads, this would not be the last such attack the Russians would face. Whether the lessons learned at Serzhen-Yurt or Yaryshmary are applied remains to be seen.

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*The photo on page 24 courtesy Venik's Aviation Page, www.aeronautics.ru.*

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*Leverage Interim Brigade Combat Team development effort as applicable.* The transition process for the 2ACR will mirror the effort that produced the Interim Brigade Combat Team (IBCT). The design team will examine the platforms, organization structures, and C4ISR architecture that have gone into the IBCT development and decide how they can be incorporated into the Regiment. The goal is to capture the insights and lessons learned from the IBCT development process and use those lessons and insights to accelerate the 2ACR transformation process.

As we develop plans to transform the Army and the Armor Force, 2ACR's role becomes increasingly critical to the success of our strategy. In fact, as a harbinger of change and transformation within our cavalry regiments, I would propose we consider a name change for this great and historical outfit. We'll look at the potential to designate the 2ACR as the 2nd Interim Cavalry Regiment (2ICR), thus designating it as the unit along whose path we will achieve Objective Force Cavalry capability. The 2ACR has a long and distinguished record of service to the Army and the nation. The 2ICR will continue this tradition throughout the 21st century.

**FORGE THE THUNDERBOLT  
AND STRIKE FIRST!**

### Fort Knox To Host Armor Ball Next Year

MG B.B. Bell, the Commanding General, U.S. Army Armor Center and Fort Knox, will host the Fort Knox Armor Ball at 1800 hours on February 10, 2001, at the Armor Inn, Fort Knox. The ball is being held to celebrate the proud history and tradition of the Armor Branch. For additional information please contact SGM Lawrence, Office of the Chief of Armor, (502) 624-5155, DSN 464-5155, or via email at:

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## T-90 or T-72BM?

# Did the Rebels Misidentify Knocked-Out Tanks?

by Adam Geibel

In early February, Pentagon intelligence officials told *Washington Times* reporter Bill Gertz that Chechen mujihadeen fighters had claimed the destruction of 13 T-90 MBTs, as part of a total of 70-some Armored Fighting Vehicles knocked out since August 1999. An unnamed intelligence official said that the Chechens had used rocket-propelled grenade launchers and that "It took them five or 10 rounds [for each tank], but they were able to knock out the tanks."

This was no real surprise, as the Chechen news site [www.kavkaz.org](http://www.kavkaz.org) had published those same comments and figures by Mujihadeen field commander Shamil Basayev on 20 January, but in reference to MOUT fighting in Grozny (Chechen name "Dzhokhar City"). The first Chechen report of T-90s was a Kavkaz note that two had been knocked out in the capital's 56th District on 4 January 2000. A month after the *Washington Times* report, the Mujihadeen would claim that they had knocked out 20 T-90s (as part of a total 400 Russian AFVs destroyed).

The Chechens even claimed a T-80 knocked out in a 30-minute engagement two kilometers from Dolinsky (a northern Grozny suburb) on 22 June.

But were the tanks the Chechens knocked out really T-90s?

Considering that the Russian military had clearly stated to the press that the T-90 had not been deployed to Chechnya, this might be a classic example of Armor Fighting Vehicle mis-IDentification (AFVmisID). If an observer — any observer — isn't careful, the T-72BM can be easily mistaken for the T-90.

With only 150 built by mid-1998, the Siberian Military District's 21st Taganrog Red Banner Order of Suvorov Motorized Rifle Division received the first 94 of these MBTs and formed a tank regiment (T-90s were also issued to the 5th Don Guards Tank Division in Buryatiya).

However, when the Siberian Military District Guards Tank Regiment deployed to Chechnya in the fall of 1999, it was in T-62s. When asked in November by *Kommersant* reporter Ilya



A Russian T-72BM carries troops near Grozny, Chechnya.

Federov why T-62s and not T-90s had been dispatched from the Siberian military district, the Russian Forces Armed Forces Armaments Chief, Anatoliy Petrovich Sitnov, had a logical answer:

"Why are we shipping T-62 tanks? I feel that it is because these are tanks that we mastered back in Afghanistan. We do not consider it necessary to burn up T-72 and T-80 tanks. That is an expensive pleasure. There are no tanks on the other side, therefore, they will not have to fight tank against tank — there will be no such situation. The T-62 and T-55 tanks are the most preferable for carrying out the missions they have there. They are lighter, they work well in the mountains, they negotiate the higher mountains well — that is enough."

Other Russian journalists were more cynical about the T-90's non-deployment. Only eight days before the Pentagon's announcement, *Komsomolets'* Viktor Sokirko was asking whether a lack of funds was the real reason.

Considering that the planned deployment of other new weapons systems to Chechnya had been given strong media support by the Russians, who were eager to export 'combat-proven' armaments, the claims of T-90 kills in Chechnya reads more like a case of AFVmisID by the Chechen Mujihadeen.

Readers should take into account that most mujihadeen reports were taken

after the chaos of ambush-attacks, that the Chechens rarely retained physical possession of the battlefield, and the T-90's similarity to the T-72BM.

This still leaves the Indian Army, which is in the process of acquiring their first batch of 100 T-90s as this is written, and other potential international purchasers with the wide-open question — "How will the T-90 stand up to combat?"

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The photo above courtesy Venik's Aviation Page, [www.aeronautics.ru](http://www.aeronautics.ru).

# THE MOUNTED TRAINING STRATEGY: Baseline Training for the Armor Force

by Colonel John S. Harrel, CA ARNG

*"We must develop a technique and method so simple and so brief that the citizen soldier of good common sense can readily grasp the idea."*

*General George C. Marshall<sup>1</sup>*

As we enter the 21st century, the Army of the United States is confronting uncertain adversaries, limited training resources, multiple and extended overseas deployments, and the threat of downsizing. The most positive aspect of this new era is the improved relationship between the regular Army and the National Guard.

Current doctrine divides Army combat formations into three levels of readiness: active duty, Guard enhanced brigades, and divisional brigades. Each level is provided different levels of resources.

The Regular Army is provided funding to prepare it for immediate deployment. But active duty combat formations are currently stretched by the Army's many commitments, and would be insufficient to fully implement its role if it were called on to fight in two major regional conflicts, as the national security strategy requires. It would have to be reinforced by National Guard combat formations.

The enhanced Guard brigades (ESBs) are next in line for funding. They receive enough funding to train brigades and battalions for deployment after a period of *limited* post-mobilization training.

The lowest priority of resources go to the divisional Guard brigades, which are charged with training combat platoons in basic skills prior to mobilization. These divisional Guard formations would require *substantial* post-mobilization training prior to deployment.

Our challenge in this decade will be to weave these three "strings" into an integrated combat formation.

## Back to Basics

Army doctrine dictates that peacetime training should focus on the require-

ments of a unit's wartime mission. Armor and infantry battalions have only one basic mission: to close with and destroy an enemy with fire, maneuver, and close combat. In simple terms, these battalions must be able to shoot, move, and communicate. All other missions utilize the skills that fall within this combat mission, whether peacekeeping, military support to local law enforcement, humanitarian relief, or high-intensity combat. Our training strategy should ensure that soldiers at all three levels of readiness have mastered the same core skills. Platoons and companies must be highly proficient in battle drills, movement techniques, and direct fire gunnery (shoot, move, communicate, and small unit leadership). Brigade and battalion staffs must be able to focus combat power at the decisive place and time (synchronize the battlefield operating systems). In order to ensure that the team has the depth to handle all contingencies, the entire team is trained in the basics. We need an Army-wide mounted training plan that focuses on the core skills. Overall training and validation requirements should be the same for all three "strings." It should be built upon the base of the lowest priority formation.

## Establishing A Baseline

Training is currently driven by *Field Manuals (FM) 25-100, Training the Force* and *FM 25-101, Training the Force: Battle Focused Training*. These two excellent manuals explain the Army Training Management System (ATMS). The ATMS forms the foundation on which the Mission Training Plans (MTPs) build the mounted force's core battle tasks. It has long been a central tenet of the mounted force that small unit excellence is accomplished by mastering the MTP battle tasks. The ATMS, as currently published, is a good system to focus training of the mounted force,<sup>2</sup> but in an unconstrained training resource environment. It does not identify the baseline battle tasks that the *entire mounted force* needs to be able to perform to

standard. Prior to our recent extended peacekeeping operations, this may not have been a problem. Now the limited training time, due to peacekeeping and other distracters, has eroded the combat skills of our Abrams and Bradley crews, squads, sections, and platoons. Due to limited training resources across the mounted force, mastery of all of the battle tasks found in the MTPs is beyond the ability of any component of the mounted force, regular or Guard. Many mounted force units attempt to accomplish all the tasks and normally end up failing to achieve the Army standard on any of them. This frustration is evident in the entire mounted force, not just Guard combat units. To correct this training deficiency, it behooves the leadership of the mounted force (both NCOs and officers) to focus limited resources on the baseline battle tasks that we need to defeat America's enemies and survive.

This training technique is not new. Before and during WWII, General George C. Marshall believed that simplicity was the best counter to the complexity of battle. He insisted that units train to standard one simple task — the holding attack. This training strategy was implemented from platoon to division. As an officer progressed through the ranks, he was well versed in one basic combat operation; he simply mounted the attack on an ever-increasing scale.<sup>3</sup>

Like the holding attack of old, the modern battle task of "Offensive Operations" contains all of the critical core tasks.<sup>4</sup> A review of the battalion and brigade training matrixes dictates that even performing a hasty defense is found within the "Offensive Battle Tasks."

Training to standard in basic gunnery and maneuver tasks are the keys to a successfully trained force. The task and standards must be achievable by all three "strings." *DA Pam 350-38, Standards in Weapons Training* developed realistic gunnery goals and standards for the entire mounted force, based

## 40th Infantry Division (CA ARNG)

### Combat

#### (M2) Infantry Plt.

Perform AA Activities  
Move Tactically  
Breach Operations  
Overwatch/Support by Fire  
Assault  
Consolidate and Reorg.

#### Armor Plt.

Perform AA Activities  
Move Tactically  
Attack by Fire  
PLT Fire and Movement  
Assault  
Consolidate and Reorg.

#### Scout Plt.

Perform AA Activities  
Move Tactically  
Route Recon  
Actions on Contact  
Consolidate and Reorg.

### Combat Support

#### Motor Plt.

Occupy AA  
Occupy Firing Position  
Move Tactically  
Fire Hip Shoot  
Fire Adjust Fire  
Fire Direct Lay

#### Communication Plt.

Occupy AA  
Establish Communications  
Establish Remote Communications  
React to Jamming

### Combat Service Support

#### Maintenance Plt.

Precombat Checks  
Plan and Conduct Convoy  
Quartermaster Party  
Tow Disabled Vehicle  
Consolidation and Reorg.

#### Support Plt.

Precombat Checks  
Plan and Conduct Convoy  
Defend Against Ground Ambush  
Secure and Defend Unit Position

#### Medical Plt.

Establish Aid Station  
Casualty Evacuation  
Triage Patients

Table 1

## Fort Knox

### Platoon Tasks

Assault  
Attack By Fire  
Overwatch/Support By Fire  
Breach Operations  
Platoon Defense

### Company Tasks

Attack By Fire  
Assault  
Support By Fire  
Breach an Obstacle  
Defend Battle Position

### Battalion Tasks

Meeting Engagement  
Assault  
Attack/CATK By Fire  
Defend

### Brigade Tasks

Hasty Attack  
Deliberate Attack  
Area Defense

Table 2

three strings of the mounted force would train their platoons on the same core battle tasks. Each string would train at company, battalion, and brigade levels, based on resources. Guard divisional combat brigades would focus on platoon field training and train company/team, task force, and brigade battle tasks in simulation. The live training for battalion and brigade operations would become post-mobilization training tasks. Enhanced Guard and Regular Army combat brigades would conduct virtual and live training on the company, battalion, and brigade level.

The results of such training would be a three-string force that could quickly mobilize and deploy into a combat theater with the depth to sustain extended deployments or replace casualties. Regular brigades could be quickly deployed, followed by Guard enhanced brigades. Guard divisional battalions and brigades arriving at mobilization stations could provide certified combat platoons to their "Teamed" regular brigades and divisions to round them out and bring them up to full strength before or after deployment. The performance of the 8th Marine Reserve Tank Battalion and other Marine Reserve combat units during the Gulf War validates this strategy. If the Marines can integrate their armor force in such short order and be successful in battle, so can the Army.<sup>7</sup>

upon resource levels. However, the Army has not provided a similar document for maneuver training.

Establishing a baseline training strategy is the responsibility of the Army's mounted force leaders. The Directorate of Training and Doctrine Development at Fort Knox has recently produced a draft training strategy. The battle tasks identified in the directorate's draft, entitled "Combined Arms Mounted Training Strategy," are remarkably similar to those previously identified in the "Standardized Platoon Training and Validation Program"<sup>5</sup> published in September 1999 by the 40th Infantry Division

(Mech) (CA ARNG). The 40th ID (M) is a divisional unit. Its Baseline Training Strategy is focused at platoon level for all of its combat, combat support, and combat service support platoons. The Fort Knox plan links the armor and mechanized infantry platoon battle tasks to the tasks at company, battalion, and brigade level. (See Table 2) The 40th ID (M) plan currently links platoon function within a battalion task force. (See Table 1)

The advantage of implementing a mounted training strategy,<sup>6</sup> based upon the entire heavy combined arms team is realistic battle-focused training. All

The need for a baseline combined arms mounted training strategy has been evident for the past 10 years. The development of one strategy with three different resource levels is the key to making this program successful. A training program of this type will develop "killer" platoons and companies throughout the mounted force. This will ensure that the Army of the United States has ready access to its entire heavy combined arms team force for its national strategy.

Continued on Page 36



# THE BATTLE OF AACHEN

## The 1944 Siege of Germany's West Wall Led to MOUT Fighting in a Historic City

by Captain Bruce K. Ferrell

### Preface

At this year's Armor Conference in May, Fort Knox officially opened and dedicated a new, state-of-the-art Mounted Urban Combat Training Site. This is a significant milestone in the Army's attitude towards training for Military Operations in Urban Terrain (MOUT). In years past, the mounted force often avoided serious MOUT training, handing it over to the light fighters like an unwanted problem. But the importance of being able to operate in cities has been vividly illustrated during our past and present operations in Panama City, Port-au-Prince, Mogadishu, and Bosnia. And the worldwide demographic trend towards more urbanized populations makes it all the more likely that mounted forces will conduct operations in urban areas.<sup>1</sup>

The Armor Center identified the need for a training center specifically for mounted forces early in the 1980s, and the training site that was recently dedicated has been a long time in coming. While the new training site will help us to develop new tactics, techniques, and procedures for our modern forces and modern weaponry, we can also learn a great deal about MOUT from military history. Indeed, many of the same urban combat TTPs used during WWII by the U.S. Army are still applicable today. Many of these lessons were learned by the First Army during its siege of the first German city captured by the Americans, the city of Aachen, in October, 1944.

In the late summer of 1944, in accordance with General Eisenhower's "broad front" strategy, the Allies were on the offensive in every sector of the Western European Theater.<sup>2</sup> Despite constant British appeals for a focused "narrow thrust" into Germany to capture Berlin, Eisenhower maintained the strategy he believed would best accom-

plish the goal of German unconditional surrender. That strategy was to destroy Germany's ability to wage the war. To do this, Eisenhower sought to capture the industrial areas of the Ruhr and the Saar in order to deprive Germany of the critically needed resources and infrastructure in these areas. Eisenhower's plan employed armies along several major routes of advance into the heart of Germany. The most direct route to the Ruhr industrial area was the Maubeuge-Liege-Aachen axis.<sup>3</sup> First Army, commanded by LTG Courtney Hodges, drew the task of moving along this axis, crossing the Rhine River, and capturing the area.<sup>4</sup>

The German forces opposing the Allies in the Western Front were under the command of *Oberkommando der West (OB WEST)*. After the Allied breakout from the bocage country of Normandy, German forces were continuously on the verge of being routed. However, all through the summer of 1944, *OB WEST* had managed to hold a cohesive front against the Allies in a massive delaying action. Hitler's constant orders "to hold at all costs" were of little help to the commander of *OB WEST*, General Walther Model.

Model sent report after report to *Oberkommando der Wehrmacht (OBK-W)* begging for reinforcements. In response to his constant appeals for help, Hitler replaced him with General von Rundstedt, who received the same "hold at all costs" orders.

Von Rundstedt, knowing he would get no help from the German high command, immediately set about to stabilize his front. He ordered his forces to fall back upon the West Wall, thus giving his forces defenses to fight from, shortening their interior lines and condensing the front.<sup>5</sup> He didn't know it, but *OB WEST*'s mission was to delay the Allies long enough for Hitler to



assemble a massive force to conduct a sweeping counteroffensive "out of the Ardennes...across the Meuse and on to Antwerp!"<sup>6</sup>

On both north and south, the Maubeuge-Liege-Aachen axis was bordered by severely restricted terrain. To the north, the waterways of the Netherlands hindered mounted movement, while the Eifel highlands and the Ardennes to the south were too restrictive to allow movement of large formations. The Germans tied the Wurm River, running approximately southwest to northeast in front of Aachen, into the West Wall defense as an anti-tank obstacle, but the river was not much more than a stream, at best, and easily fordable in most places. Beyond the Wurm was an open plain dotted with small groups of built-up areas, broken only by the Roer and Erft Rivers.<sup>7</sup>

Tied into this natural terrain was the complex of man-made defenses known as the West Wall, or as the Americans called it, the Siegfried Line. Hitler had built the West Wall in 1936 as a strategic counter-move to the French Magi-



not line. It had been a monumental effort at the time, but once the Nazis conquered France, the fortifications of the West Wall had fallen into disrepair. One of the most fortified stretches of the wall remained in the Aachen sector. Around the city, the West Wall split into an east and west branch.

The West Wall incorporated natural obstacles like rivers, lakes, railroad cuts and fills, defiles and forests as much as possible, but where natural obstacles were inadequate, there were massive chains of "dragon's teeth," rows of reinforced-concrete pyramids, increasing in height from 2.5 feet in the front rows to almost five feet in the back rows. Roads leading through the dragon's teeth were blocked with gates made of steel I-beams, and all roads were additionally guarded by pillboxes. Pillboxes were 20 to 30 feet in width, 40-50 feet deep, and 20-25 feet high.

At least half of each pillbox was underground, the walls and roofs made of reinforced concrete varying from 3-8 feet in thickness. They had living quarters for troops and firing ports sighted

on designated areas. Additionally, to the rear of the pillboxes were bunkers, designed to house reserves and command posts. They were constructed in a similar fashion, with more living space and fewer firing ports.

Though these fortifications were in poor condition, and the speed and maneuverability of modern mechanized warfare had made them obsolete, the Allies would soon learn that even outdated fortifications could lend strength to any defense.<sup>8</sup>

In the center of all this lay the ancient city of Aachen. Militarily, the city was significant because it controlled most of the major roadways in the area. General Hodges knew he had to capture the city in order to secure his lines of communication for further advances east into the Ruhr. But aside from its strategic value, Aachen's real significance lay in its political and ideological importance. Aachen would not only be the first German city besieged by the Americans, but was also the birthplace of Charlemagne, the Emperor of the Holy Roman Empire, which Hitler of-

ten referred to as the First Reich. Hitler had declared the rule of the Nazis as the Third Reich, psychologically aligning himself to the Holy Roman Empire and Charlemagne. To strike at Aachen, therefore, was to strike at a symbol of Nazi faith.<sup>9</sup>

To accomplish the First Army's mission, Hodges directed the XIX Corps, under MG Charles Corlett, to attack through the West Wall north of Aachen, in the vicinity of Girenkirchen. As part of this attack, the 30th Infantry Division, Corlett's southernmost division was to break south over the Wurm River to capture Wurselen. The 30th Division's attack constituted the northern prong of an encircling maneuver to surround Aachen. The southern prong would be conducted by the 1st Infantry Division, under MG Clarence Huebner. The 1st Division was from the VII Corps, commanded by MG J. Lawton Collins. The division was to attack north to initially capture Verlautenheide and then capture Ravels Hill (Hill 231). Once Aachen was encircled, the Allies would pound the city



with air strikes and artillery barrages, then conduct a deliberate assault.<sup>10</sup>

Facing the XIX Corps and VII Corps was the LXXXI Corps of the German Seventh Army, commanded by the newly appointed General Friedrich Koechling. The German Seventh Army commander, General Erich Brandenberger, put Koechling in charge of the LXXXI Corps to replace LTG Friedrich August Schack, who had proved ineffective at controlling his subordinates.

It was revealed that Schack's subordinate division commander in charge of the defense of Aachen, LTG Count Gerhard von Schwerin of the 116th "Greyhound" Panzer Division, had been planning to surrender the city to the Allies. Schack immediately relieved Schwerin, but failed to apprehend him in a timely fashion. Upon Koechling assuming command of LXXXI Corps, he pulled the 116th "Greyhound" Division out of Aachen and replaced it with the 246th People's Grenadier Division, commanded by COL Gerhard Wilck. Koechling also had at his disposal the 49th Infantry Division defending north of Aachen and the 12th Infantry Division defending south of the city. But both of these divisions had taken recent poundings. The 12th Infantry had recently arrived as a reinforcement from the German Seventh Army, but had been committed piecemeal by Schack, and therefore was forced out of Stolberg by the American 3rd Armored Division south of Aachen. In the north, the 49th Infantry Division was losing ground to the 30th Infantry Division's offensive to reach Wurselen.<sup>11</sup>

To add to all this, the German Army spent enormous time and effort controlling the civilian populace of Aachen. Even after a forced evacuation by SS troops, it was estimated that some 40,000 civilians remained in the city during the siege.<sup>12</sup> Aachen was primarily Catholic, and therefore had been persecuted by the Nazis. They saw the oncoming American attack as liberation. Many of them hunkered down in cellars or attics, trying to avoid the SS troops sent to root them out of their homes, waiting for the Americans.

A combination of logistical shortages and lack of air cover due to poor weather forced Hodges to halt his of-

fensives in mid-September.<sup>13</sup> The pause in fighting allowed the Americans to re-tool their units for decisive action. Hobbs planned to make a three-pronged attack in the north, employing all the regiments of the 30th Division simultaneously. The 117th Infantry Regiment, under COL Johnson, was ordered to seize high ground in the vicinity of Mariadorf to secure the division's left flank. The 120th, under COL Purdue, was ordered to seize high ground northeast of Wurselen and also to cut off the Aachen-Juelich highway running northeast out of Aachen. The 119th, under COL Sutherland, was ordered to take north Wurselen in order to link up with elements of the 1st Division to close the encirclement of Aachen.<sup>14</sup>

In the south, Huebner's 1st Infantry Division was also preparing to resume its offensive. Because of his extended front, Huebner could only free the 18th Infantry Regiment under COL Smith for his portion of the attack. In preparation for the attack, COL Smith organized special pillbox assault teams equipped with flame throwers, Bangalore torpedoes, beehive munitions, and demo charges. They trained for several days on the tactics to reduce pillboxes. Smith also task-organized M10 tank destroyers and 155mm howitzers for direct fire suppression of fortifications.<sup>15</sup>

Additionally, tanks and tank destroyers were used for a variety of secondary purposes. Flamethrower tanks were especially useful for clearing out pillboxes and bunkers. Bulldozer tanks were used to bury those pillboxes that could not be destroyed.<sup>16</sup>

On the German side, Koechling was assembling ad-hoc units from stragglers, deserters and anyone else he could throw into the lines. Then on 7 October, von Rundstedt released his theater reserve, the I SS Panzer Corps, to Koechling to reinforce the defenses of Aachen. Unfortunately, Koechling was so desperate for reinforcements, he began committing the Panzer Corps units as soon as they arrived in his sector, rather than waiting to use them as a concentrated force.

On 7 October, the 30th Division resumed its offensive in the form of a massive aerial bombardment, followed

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*"Aachen was primarily Catholic, and therefore had been persecuted by the Nazis. They saw the oncoming American attack as liberation."*

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by massed artillery barrages. The division commenced its ground assault immediately after the strikes. Determined patrolling had revealed the locations of most of the Germans' manned fortifications, so the attack was focused on destroying those positions. The division attacked from Alsdorf south towards Uebach and Wurselen, with their final objective being Hill 194 south of Wurselen. They received stiff resistance from the 108th Panzer Brigade and the Mobile Regiment von Fritzsch, recently arrived into their sector from the I SS Panzer Corps. On the eastern flank, Mobile Regiment von Fritzsch successfully blocked the 117th Regiment at Mariadorf. Then on 8 October, the Mobile Regiment attacked north-west towards Schaufenberg and Alsdorf searching for the regiment's flank. This move threatened to encircle them. Fortunately, elements of the 743rd Tank Battalion were roaming the streets of Alsdorf when the Mobile Regiment entered the city. The tanks and tank destroyers of the 743rd quickly took out three Mark IV tanks. The shock effect of this halted the German counterattack.<sup>17</sup> The 117th Regiment then re-established the division's left flank during their counterattack on 9 October.

On the western flank, the 120th Regiment quickly moved to its objective of North Wurselen, a mere 2,000 yards from the link-up point at Ravels Hill. However, their quick advance had overextended their lines, and on 9 October the 108th Panzer Brigade counterattacked into Bardenberg, threatening the 120th's line of communication. It took three days of counterattacks by both the 120th and 119th Regiments to uproot the Germans from Bardenberg. Then on 11 October, the skies cleared, enabling U.S. planes to attack the col-

Meanwhile, the southern prong attack of the encircling offensive commenced on 8 October. In order to offset its numerical disadvantage with surprise, the 18th Infantry Regiment conducted its attack in the pre-dawn darkness. As a result, the regiment successfully captured all of its initial objectives with minimal resistance. By evening on 9 October, the 18th Regiment was in possession of Ravels Hill, the designated link-up point with XIX Corps. In addition, by 10 October, the regiment had captured Haaren, a suburb of Aachen astride the two major highways leading east out of Aachen. Thus, the 18th Regiment had cut the Germans' lines of communication into the city.<sup>19</sup> The real challenge was to hold their objectives despite vicious German counterattacks. These counterattacks typically consisted of massive artillery barrages, followed by infantry attacking, supported by tanks and assault guns. Ironically, the American troops often occupied the very pillboxes they had cleared earlier in order to defend against the German counterattacks. Fighting was often from pillbox-to-pillbox, foxhole-to-foxhole, hand-to-hand.

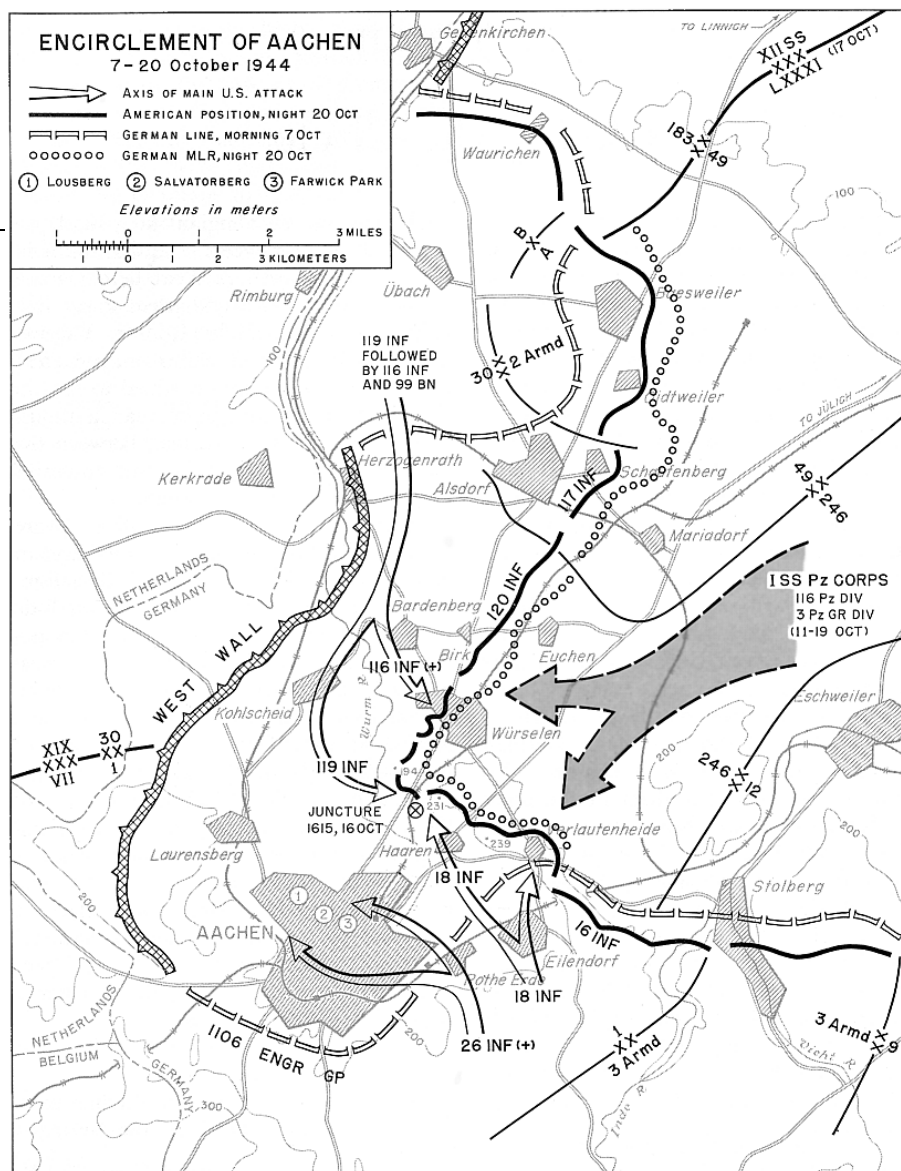
Because of the constant German local counterattacks, the 30th and 1st Infantry Divisions had still not effected a link-up. Despite this gap in the encirclement, General Huebner delivered his surrender ultimatum to the garrison of Aachen on 10 October.<sup>20</sup> The task of assaulting the city fell to the 1st Infantry Division's 26th Infantry Regiment, commanded by COL John Seitz. At his disposal, he had two battalions, the 2d Battalion, commanded by LTC Derrill Daniel, and the 3d Battalion, commanded by LTC John Corley. Daniel's battalion would cross the Aachen-Cologne railroad and assault through the center of the city, while Corley's battalion would initially attack around the north of Aachen to recapture the suburb of Haaren, then attack southwest to capture the dominating high-ground on the northern side of Aachen. This high-ground consisted of several points of key terrain. The highest terrain was Lousberg, called Observatory Hill by the Americans because of the

obvious building on top. Below Observatory Hill was the Salvatorberg, a lower hill with a cathedral on it. Below Salvatorberg was Farwick Park, slightly elevated on the east side of Aachen. Farwick Park was even more important because the Hotel Quellenhof was located in it, and this is where the 246th's headquarters was located.

While the Americans were preparing to take the city, the Germans were still holding out hope that they could relieve the siege. Even as the American air bombardment and artillery barrage delivered over 300 tons of explosives on Aachen on 11 and 12 October, elements of the 3rd Panzer Division and the rebuilt 116th Panzer Division began to arrive to reinforce the LXXXI Corps. In addition, Koechling sent the 1st SS Battalion, Battalion Rink, into Aachen to “reinforce” the 246th.<sup>21</sup>

On 12 October, LTC Corley's 3d Battalion commenced its attack by secur-

ing the suburb of Haaren. Then on 13 October, the battalion began its attack to seize Observatory Hill, while LTC Daniel's 2d Battalion simultaneously began its assault into the center of the city. Daniel had anticipated very determined German resistance during his assault, and had prepared his men for the fight. Artillery and mortars would pummel the streets ahead of advancing infantry. The pattern of indirect fire was coordinated by city blocks. Once the clearing teams reached a certain point, the indirect fire would shift to the next city block. Infantry squads clearing houses were given either a tank or a tank destroyer to suppress houses and buildings as the infantry approached. Once the infantry reached the house, the tank or tank destroyer would shift fires to begin suppressing the next house or building. The infantry and combat engineers would clear buildings using flame throwers, grenades, and demolition charges. Checkpoints were



established at street intersections and no unit could advance beyond a checkpoint without coordinating with their adjacent unit at that checkpoint. These measures made the advance very slow and deliberate, but were necessary to ensure there would be no pockets of enemy resistance left behind and to prevent fratricide.

Despite the deliberate nature of the assault, the Germans fought viciously both in the city and outside against the American encirclement. The Germans used the sewers very effectively, which took the Americans by surprise at first. Because of this, the attacking Americans would weld each manhole shut as they progressed through the streets.<sup>22</sup> Also, the Germans effectively used cellars and basements. They even knocked down walls between the cellars of adjacent buildings so they could move troops from one building to another. They found that the reinforced concrete walls of the more modern apartment buildings could withstand direct fire from even tanks and tank destroyers, so they turned every apartment building into a collection of room-to-room strongpoints. The only way the Americans found to penetrate such buildings was to use 155mm howitzers in direct fire mode.<sup>23</sup>

Outside the city, German forces continued to attack to break the encirclement. On 12 October, two regiments of the 116th Panzer Division (the 60th Panzer Grenadier Regiment and Kampfgruppe Diefenthal) attacked the towns of Birk and North Wurselen to break the 30th Division's encirclement. The American defense of these positions played out like a ballet of reinforcing units. While individual small groups held their ground, battalions, regiments and the division would rapidly feed reserve forces into any penetration of their lines. The see-saw fighting between the 116th Panzer Division and the 30th Division continued through 15 October.<sup>24</sup>

Meanwhile, by 14 October, LTC Corley's 3d Battalion had advanced into Farwick Park. On that same day, forward positions of the 18th Regiment near Verlautenheide reported the build-up of German forces opposite their positions. These forces were the 29th Panzer Grenadier Regiment and the 8th



**American troops attacking Aachen faced determined SS defenders who had fortified the historic city's stone buildings. This forced the use of heavy artillery in the direct-fire mode, like this M12 155mm self-propelled howitzer – shown here in full recoil as it engaged German armor.**  
– Photo Electronically Modified

Panzer Grenadier Regiment, the leading forces of the 3rd Panzer Division, more reinforcements from the I SS Panzer Corps. On 15 October, Corley's 3d Battalion advanced through Farwick Park and put the Hotel Quellenhof under siege with a 155mm howitzer. On that same day, the 3rd Panzer Division launched its attack against the 1st Infantry Division in the vicinity of Verlautenheide. Though completely uncoordinated, the SS Battalion Rink also launched a localized counterattack in Farwick Park, driving back the 3d Battalion. With two major fights going on, General Huebner deemed the attack by the 3rd Panzer to be of the greatest threat, and ordered LTC Corley's offensive within Aachen to cease until the threat to the encirclement could be defeated.<sup>25</sup>

General Huebner had pulled his 116th Infantry Regiment, commanded by COL Joe Dawson, into the encirclement from the south to bolster the weakened 18th Regiment. Despite this reinforcement and the use of massive artillery barrages by the Americans, the regiments of the 3rd Panzer overran two companies of the 16th Regiment and one company of the 18th Regiment, puncturing the inter-regimental boundary between them. Just then, bombers and fighters came to the 1st Division's rescue, defeating the 3rd Panzer's attack. The German attack continued on 16 October, but the Americans held their positions, even against point-blank tank fire. On that day, using tank destroyers and artillery

fires, the 3rd Panzer's attack was finally defeated, and the 1st Division remained in control of Ravels Hill and Verlautenheide.<sup>26</sup>

In the 30th Division's sector, fighting was at a standstill. Hobbs had failed to take Wurselen despite receiving reinforcements from XIX Corps on 13 October in the form of a tank battalion from the 2nd Armored Division and a regiment from the 29th Infantry Division. The 30th Division finally captured Wurselen on October 16 with a two-pronged assault to the south, driving the 116th Panzer from the field in final defeat. At 1615 hours on 16 October, a patrol from the 30th Division linked up with the 1st Division's outpost on Ravels Hill. The encirclement of Aachen was complete.<sup>27</sup>

LTG Collins, VII Corps commander, had finally grown impatient with the drawn-out siege of Aachen. During the lull in the fighting within Aachen, he reinforced the 26th Infantry Regiment with two tank battalions and an armored infantry battalion. He ordered Huebner to resume the assault of Aachen no later than 18 October.<sup>28</sup>

For the LTC Wilck and the 246th Division, the encirclement of Aachen sealed their fate. Even as von Rundstedt ordered Wilck to hold the city even if he were "to be buried in its ruins," he withdrew the decimated I SS Panzer Corps units back from Aachen.<sup>29</sup> Wilck moved his headquarters from the Hotel Quellenhof to an air raid bunker at the north end of Lousberg

heights called Rutscherstrasse. He hunkered down and waited for the American assault to commence.<sup>30</sup>

On 18 October, Huebner began his final offensive to take Aachen. They immediately took the Hotel Quellenhof, only to find that Wilck had moved. Even with crumbling German resistance, the deliberate securing of the city took several days. On 20 October, the Americans had located Wilck's new headquarters and were tightening the ring around it. Corley once again pulled up his 155mm howitzer to pummel the air raid bunker. After being bombarded during the night of 20 October, Wilck finally surrendered at 1205 hours on 21 October 1944.<sup>31</sup>

The American victory at Aachen was a costly one. The 30th Division incurred some 3,000 casualties during their encircling attack from the north. The 26th Infantry Regiment, the force that assaulted the city, had a combined total of 498 casualties. The fight had used up every reserve of both the 30th and 1st Divisions. Though the actual siege of the city had taken only 10 days, the operations to encircle Aachen had taken six weeks. On the German side, the vaunted I SS Panzer Corps had lost 50 percent of its combat power and retreated from Aachen in defeat. The LXXXI Corps was decimated, having completely lost the 246th Grenadier Division in the surrender of Aachen. The city of Aachen itself lay in ruins, with 80 percent of the buildings in rubble.<sup>32</sup>

The long term implications of the battle for Aachen are mixed. By capturing Aachen, the First Army had accomplished one of its intermediate objectives to crossing the Rhine River and capturing the Ruhr industrial area. No doubt, the loss of Aachen was a psychological blow to the Germans and must have infuriated Hitler. The securing of Aachen also allowed General Omar Bradley to insert a new Army, the 9th U.S. Army under LTG William Simpson, into his lines, thus affording more combat power to the 12th Army Group. However, considering the amount of time and resources that the siege of Aachen consumed, the battle must be considered a strategic victory for the Germans because it gave Hitler the time he needed to build his forces for the Ardennes counter-offensive in December 1944.<sup>33</sup>

The real value in studying the battle of Aachen is the lessons that the battle teaches to our Army today. As the world becomes more and more urbanized, the likelihood that American forces will be required to conduct Mounted Operations in Urban Terrain (MOUT) in future conflicts is extremely high. Many of the tactics, techniques, and procedures used during the assault on Aachen still remain relevant today.

The most important lesson to learn from the battle of Aachen is the importance of combined arms operations in urban warfare. As LTC Daniels' 2d Battalion showed us, conducting urban fighting requires all the BOS elements. His use of artillery forward of the assault teams to clear the streets, his use of tanks and tank destroyers in direct fire mode to suppress strongpoints, and his use of infantry and engineers to clear buildings are all relevant TTPs in modern-day urban warfare, and are even part of our doctrine.<sup>34</sup> Daniels also used command and control methods equally useful today in order to prevent bypassing enemy resistance and fratricide by establishing checkpoints at street intersections. General Hobbs demonstrated the importance of intelligence in urban warfare during the attack by the 30th Infantry Regiment to seize North Wurselen; because his determined patrolling had revealed many of the locations of the enemy's positions, his forces were able to focus their efforts to take them out.

Other major lessons emerge from German mistakes, especially by Koechling. He committed his reinforcements (mainly the I SS Panzer Corps) piecemeal, rather than waiting to consolidate the arriving units and staging a major counter-offensive. This is a counter-example of the principle of *mass*. The American forces only did a slightly better job of applying mass when committing their reinforcements. Where the Americans had the distinct advantage was not necessarily the ability to mass units but the ability to *mass fires*. Artillery and air power must also be massed, and the Americans constantly made up for their weaknesses on the ground with overwhelming firepower. An excellent example of this was the use of air power to defeat the counterattacks of the 108th Panzer Bri-

gade in Bardenberg, aimed at enveloping COL Purdue's 120th Regiment on 11 October.

A third major lesson is the importance of command and control and tactical patience. The 26th Infantry Regiment's assault on Aachen was very slow and deliberate. Often, when in the offense, forces rush to reach their objectives, but in urban warfare, slow is better. Every pocket of resistance must be eliminated and every strongpoint neutralized. Tedious tasks like welding man-hole covers shut and coordinating with adjacent units at every street corner are time-consuming, but are critical to force protection in urban combat.

Combined arms operations, decisive massing of fires, inventive command and control techniques, and tactical patience are principles equally applicable to the modern day urban battlefield as to the battlefield of Aachen. There are many more lessons to be learned from the history of urban combat, not just at the Battle of Aachen, but other cities as well, and many more when considering battles in other countries. Even more importantly, studying the history of urban combat teaches military professionals an appreciation for the bravery and determination needed to fight under these conditions, as displayed by the soldiers of the 30th and 1st Infantry Divisions.

## Notes

<sup>1</sup>Robert S. Cameron. "It Takes a Village to Prepare for Urban Combat...And Fort Knox is Getting One." [knox-www.army.mil/armormag/nd97/6mout.htm](http://knox-www.army.mil/armormag/nd97/6mout.htm).

<sup>2</sup>Charles Whiting, *Bloody Aachen*, (New York: Stein & Day Publishers, 1976), 26.

<sup>3</sup>Charles B. MacDonald, *The Siegfried Line Campaign: The United States Army in World War Two, the European Theater of Operations*. (Washington, D.C.: The United States Army Center for Military History, 1963), 7. There were four major routes of advance into Germany. In 21st Army Group's sector, under the command of General Bernard Montgomery, the first route of advance ran through the plain of Flanders with relatively flat ground, but contained too many water obstacles to be considered a rapid route of advance. The second route ran along the Maubeuge-Liege-Aachen axis north of the Ardennes. This route was the most direct route into the Ruhr, but was heavily built up, especially around the city of Aachen. The third and fourth routes lay in 12th Army Group's sector, under the

## Mounted Training Strategy from Page 29

command of General Omar Bradley. The center route in Bradley's sector ran straight through the Ardennes, but the terrain was considered too restrictive for the route to be considered an axis of rapid advance. Finally, in the south, lay the Metz-Kaiserslautern-gap route through which Patton's 3rd Army was advancing.

<sup>4</sup>Ibid., 8. Despite the fact that Eisenhower sought a unified advance on a broad front against Germany, it was logistical considerations which led him to weight Montgomery's 21st Army Group in the north. The Allies were outrunning their supply lines. Their only existing deep water port was back in Cherbourg. Antwerp was in Allied hands, but the German Fifteenth Army maintained control of the channel leading to Antwerp, denying the Allies access to the critical port. Therefore, on 23 August 1944 Eisenhower attached First Army, under LTG Courtney Hodges, to 21st Army Group. This move freed Montgomery's southern units of the Aachen sector of front and allowed him to shift his focus to the plain of Flanders.

<sup>5</sup>Ibid., 17-19.

<sup>6</sup>Whiting, 14.

<sup>7</sup>MacDonald, 29.

<sup>8</sup>Ibid., 34-35.

<sup>9</sup>Ibid., 281.

<sup>10</sup>Ibid., 284-285.

<sup>11</sup>Whiting, 36. LTG Count Gerhard von Schwerin was now totally disillusioned with the war. He had been very successful in the Balkans, receiving the Knight's Cross in 1943. But Schwerin was not a National Socialist and as the war dragged on, he struggled constantly at having to serve a master in whom he did not believe. When Hitler's order to defend the city of Aachen at any cost came down to him, he quickly resolved to surrender Aachen upon the beginning of the Americans' assault. He drafted a letter expressing such intentions in secret and planned to deliver it to the Americans when their offensive started. His letter was discovered during an SS raid in Aachen while they were evacuating civilians from their homes.

<sup>12</sup>Aachen had a pre-war population of 165,710. MacDonald, 29.

<sup>13</sup>Ibid., 67. Logistical shortages were created by the beginning of Operation Market-Garden on 18 September 1944. This operation, the brain-child of General Montgomery, was a bold airborne offensive conducted in the north to capture crossing sites across the Rhine. The operation was unsuccessful.

<sup>14</sup>MacDonald, 294.

<sup>15</sup>Ibid., 287.

<sup>16</sup>William B. Folkestad, *The View from the Turret: The 743rd Tank Battalion During WWII* (Shippensburg, Pa.: Burd Street Press, 1996), 64. It is interesting to note the limitations of air power and artillery barrages when attacking heavy fortifications. The aerial bombardment missed the entire attack sector of the 30th Divi-

sion, and the artillery barrages were ineffective because the impacting rounds proved unable to penetrate the West Wall pillboxes.

<sup>17</sup>Folkestad, 63.

<sup>18</sup>MacDonald, 299.

<sup>19</sup>Ibid., 287-288.

<sup>20</sup>Whiting, 110-111. General Huebner's ultimatum read: The city of Aachen is now completely surrounded by American forces... If the city is not promptly and completely surrendered unconditionally, the American Army and Air Force will proceed ruthlessly with air and artillery bombardment to reduce it to submission... In short, there is no other way out. Either you surrender the city... or you face total destruction. The choice and responsibility are with you. Your answer must be delivered to the spot designated by the bearer of this document within 24 hours.

<sup>21</sup>Whiting, 115. In actuality, the SS Battalion was sent into Aachen to intimidate Wilck and ensure that he would not surrender the city.

<sup>22</sup>Whiting, 138.

<sup>23</sup>MacDonald, 311.

<sup>24</sup>Ibid., 301.

<sup>25</sup>Whiting, 151.

<sup>26</sup>MacDonald, 291-292.

<sup>27</sup>Ibid., 306.

<sup>28</sup>Ibid., 314.

<sup>29</sup>Whiting, 151.

<sup>30</sup>MacDonald, 315.

<sup>31</sup>Ibid., 316.

<sup>32</sup>Ibid., 317-320.

<sup>33</sup>Ibid.

<sup>34</sup>*FM 90-10-1, An Infantryman's Guide to Combat in Built-Up Areas.*

CPT Bruce Ferrell graduated from the U.S. Military Academy in 1993 with a degree in Military History. During a tour at Ft. Hood, Texas, he served as a tank platoon leader in 3-8 Cav and XO in HHC, 3rd Bde, in 1CD, and then as the force modernization officer in G3 Operations of 4ID during TFXXI and DAWE XXI. In 1998, he became a force modernization officer for the TX-ARNG in preparation for the 49AD's deployment with SFOR7 and subsequently served as the S4 for 3-112 AR (TXARNG). He is currently the commander of A/3-112 AR in San Angelo, Texas. He is a graduate of AOBC, SPLC, ACCC, Airborne and Air Assault Courses.

### Notes

<sup>1</sup>Daniel Bolger, *The Battle for Hunger Hill*, Presidio Press, Novato, Calif., 1997, 87.

<sup>2</sup>The Mounted Force is the heavy combined arms team.

<sup>3</sup>Charles F. Hawkins, John R. Brinkerhoff, and Stanley A. Horowitz, *Conference on Forces Integration: Seeking Better Reserve Component Capability and Credibility*, Institute for Defense Analysis, May 1996, II-2.

<sup>4</sup>*Mission Training Plan 71-2, The Tank and Mechanized Infantry Task Force*, September 1988, 3-10, 3-11 and 3-12.

<sup>5</sup>MG Peter Gravett, CG, 40th ID (M) (CA ARNG) implemented a platoon baseline training and validation program across his division at the beginning of TY-00 for all of his combat, combat support, and combat service support platoons.

<sup>6</sup>COL Mark A. Graham's article, "Thinking Out of the Box: Baseline Training for the ARNG," *Field Artillery*, September-October 1999, looks at implementation of baseline training for ARNG Field Artillery units.

<sup>7</sup>John S. Harrel, LTC, CA ARNG, *A United Army For the 21st Century*, USAWC Fellowship Paper, 1997.

COL John Harrel is currently the commander, 2nd Brigade, 40th ID (M), CA ARNG. Previously, he served as the M-day and then ADSW G3, 40th ID (M); commander, 2-160th IN (M) CA ARNG; commander, and battalion XO, 1-185th Armor, CA ARNG (serving as commander, Task Force 1-185 during the 1992 Los Angeles riots); and deputy G3, 40th ID (M). He served in the Marine Corps from 1975-1980 before joining the Guard. He has attended the Tactical Intelligence Officers Course, Armor Officer Advanced Course, Command and General Staff College, Army War College (Fellowship Program), and Brigade Pre-Command Course. COL Harrel holds a BA in history from Northridge University and a JD from Southwestern University School of Law, Los Angeles, Calif. In his civilian occupation, he is a Deputy Attorney General for the State of California.



# Fighting the IDT Tank Table VIII: A National Guard Unit's Solution

by Major Mike Pryor

The October 1998 version of Tank Table VIII's (TT VIII) tasks, conditions, and standards are vastly different from the version we all executed prior to that date. But after two annual qualification attempts, we believe our battalion has cracked the code on how to conduct a successful Inactive Duty Training (IDT — often called simply "drill") gunnery.

In order for the reader to gain the proper perspective on this issue, understand that National Guard tankers do not conduct tank gunnery qualification like their active duty brethren. Our active duty contemporaries are usually provided a couple of consecutive weeks to complete a Level One tank battalion gunnery cycle. While we adhere to the same tasks, conditions, and standards, our program requires breaking the tasks into blocks lasting about two days, sandwiched around two-to-four week periods of 'leave.' It is the lack of continuous training time, in a highly technical skill with no equivalent in the civilian job market, that makes gunnery proficiency no simple task.

There are several key pieces of information the reader needs in order to understand our gunnery program. To properly organize this information, this article is divided into four main sections: Planning, Preparation, Execution, and Summary.

### Planning

All training events should begin with a good assessment. Below is the Army standard METT-T assessment approach that we used.

**Mission.** Our training missions for TY00 included: 100 percent TT VIII qualification for assigned crews in IDT status, company (team) level maneuver proficiency in Annual Training (AT) status, staff proficiency in the Abbreviated Decision Making Process (ADMP), and the ability to support the force at the echelon of organization. These missions are all in line to meet prerequisites for our impending TY01 NTC rotation. In order to meet preparatory gunnery training requirements, we elected to conduct one IDT of TCGST training at company level, one IDT for our record TCGST, one IDT for TCPC

certification, and completion of COFT gates throughout the training year. All of these tasks had to be complete before crews could conduct TT VIII qualification.

Because we desired to stress the TC's role in training his crew, our record TCGST was evaluated at the crew level, with our own TCs as evaluators. Assisting each TC was a 3-395th Armor Training Support Battalion (TSBn) mentor who certified the TC to test his crew on each task. The NCOs from 3-395th Armor also served as our TCEs for TCPC and tank gunnery qualification. Dropped from the TY99 training program was a modified, live-fire TT V. After completing our first gunnery cycle, we found a well-zeroed coaxial machine gun, firing multiple weapons systems engagements during the modified TT VII — and an understanding that you engaged until you knocked down at least one troop target — were all our crews needed in order to be successful in machine gun engagements.

We also took a different look at COFT requirements. In TY99, all crews fired exercises 101, 102, 104, 153, 135, 137 and 139 using the new 314 COFT disk. Minimum passing criteria for each exercise was set as Target Acquisition: A; Reticle Aim: B; and Systems Management: B. The increased requirement to receive a grade of "A" in Target Acquisition improved a crew's speed to acquire and shoot in the offense and

move into hull defilade in the defense. For TY00, stabilized TC/gunner combinations from the previous gunnery cycle conducted a re-certification session. During this session, each crew fired Exercise 101 once as warm-up and then would fire Exercise 139 once. Crew COFT proficiency and TY00 COFT training requirements are depicted in Figure 1 below based on the results of Exercise 139.

This allowed us to concentrate IDT time on newer and less proficient crews, as well as keep crews who were not within a 50-mile radius from having to come to the armory on multiple evenings or days. (We only have one MCOFT and one UCOFT to conduct training for the battalion and the brigade's cavalry troop.) Any crew that wished to fire more than the minimum COFT requirement was allowed to do so as long as their firing did not interfere with the training of less proficient crews.

Once IDT gunnery was complete and we met or exceeded the 85 percent qualification rate called for by STRAC, we would then concentrate on maneuver training. Staff proficiency training continued throughout the year as we prepared for a brigade-level CPX and our annual rotation to the LTP program at Fort Irwin, California. Our gunnery train-up schedule looked like Figure 2.

**Enemy.** As we saw it, we had one primary "enemy" — the range itself.

Results of the Certification Exercise 139	COFT Training Requirement
Score of 800-1000 (Superior or Distinguished)	<b>Certified</b> – The crew has no COFT requirement to shoot intermediate gunnery, but should be strongly encouraged to conduct COFT training during periods other than IDT.
Score of 700-799 (Qualified)	<b>Complete Exercises 135, 137, and 139</b> to be certified prior to shooting intermediate gunnery.
Score of 699 or Less (Unqualified)	<b>Complete Exercise 101, 102, 104, 153, 135, 137 and 139</b> to be certified prior to shooting intermediate gunnery.

Figure 1 – TY00 COFT Training Requirements

Our range assessment actually began at the end of AT98 when we received word that TT VIII's tasks, conditions, and standards were changing. Back then, the battalion S3 and master gunners decided we needed to confirm or deny the range's viability for accomplishing this task. Our initial, gut assessment was that the Multi-Purpose Range Complex (MPRC) at Fort Polk, Louisiana, would *not* support the new TT VIII's targetry requirements. After all, our battalion was the only unit on the post stressing practically the entire range's array of targets in gunnery. But our initial instincts were wrong.

Once our battalion cleared the MPRC and headed to Peason Ridge for maneuver training, several of our battalion and TSBn master gunners stayed behind to put the course to the test. The MPRC range crew of Fort Polk Range Control, led by Mr. Steve Parks, eagerly aided in this endeavor, assisting us with scenario development, its loading into the MPRC's computer system, and the setting up of range targetry. Once ready, the master gunners ran the course on both Lanes A and C, using Thru-Sight Video (TSV). The TSV battle runs verified that targetry could be observed from tanks in the firing boxes on both lanes. The master gunners also took GPS readings of all targetry to determine whether or not engagement distances met *FM 17-12-1* standards. The GPS readings indicated we only had three targets that were initially outside of *FM 17-12-1* requirements.

With limited moving target presentations, our challenge was presenting troop targets with moving targets at the proper ranges. Again, Mr. Parks and the MPRC maintenance team came through by doing what was previously thought impossible. They hard-wired

SEP 99	OCT 99	NOV 99	DEC 99	JAN 00	FEB 00
TCGST Train-Up	Record TCGST	No Drill	Org/Family Day	TCPC Qualification	TTVII(M) & TTVIII

**Figure 2 – TY00 Monthly Gunnery Training Plan**

four new troop targets, reducing the target range discrepancies to within 200 meters of *FM 17-12-1* requirements. Changing the targets' movement speed, faster or slower, with stops and/or reverse movement at 10-15 second intervals of the presentation time, met our "evasive mover" requirement. Additionally, this MPRC did not have any "flat-line" moving target presentations. All movers roll up and down hills. With this very important assessment complete, we submitted the findings to the master gunner branch at Fort Knox. After their review, we received a TT VIII certification nod for the Fort Polk MPRC. We found that we did not have as many alternate targets as we would like (especially our movers), and we determined the MPRC computers needed more processing power, but we nonetheless had our range.

**Time Available.** There were two primary considerations in our assessment of time available. One question centered on whether there was enough time to conduct make-up training for any crew that missed an IDT for any reason. We saw the only time available to conduct make-up training was during a subsequent IDT period. To set the proper tone, commander's intent called for all TC/gunner combinations to arrive at the range with all preliminary gunnery training completed.

The other question was, what period of time offered the best opportunity to meet the training goal? A normal Multiple Unit Training Assembly of five periods (or MUTA-5) requires soldiers to report to the unit armory on Friday night and ends on Sunday afternoon at 1700 hours with the release of soldiers,

again from their armory. After travel time (it is 120 miles to Fort Polk from most units) and maintenance time, this equates to only about 22 hours of live-fire time on the range at Fort Polk. We tried this in TY99 and successfully qualified 22 crews over seven MUTA-5s. On any given MUTA-5, however, one or both lanes had at least one crew that fired but did not qualify, due to a need for more training and/or retraining time that was just not available. There would be no way to shift them to AT qualification as we had done in TY99.

After some discussion, we concluded that a MUTA-9 best suited our needs. We knew other Guard units had conducted extended-MUTA sessions in order to complete major training events. Indeed, the Guard Bureau's leadership had spoken for months of the need to creatively use a Guardsman's "39-days-per-year" of training time to meet training demands. But this was the first time we had suggested such a radical plan for our battalion. These MUTA-9s were divided into five tiers, each of four-and-a-half days, conducted over a consecutive 15-day period. Tiers would overlap with the one on either side by two days. (See Figure 3 below.) Consequently, scenarios for the range computer were written that allowed for all target presentations to be displayed from one lane's master scenario regardless of which tank table a crew was in line to fire.

**Troops Available.** We define a "crew" as a TC/gunner combination that has successfully completed all preliminary gunnery training together. Of course, drivers and loaders are a necessary ingredient in all but the "Three-Man Crew" engagement. But the requirement was for TCs and gunners to arrive together at the range during the same period for qualification. We would "hot-bed" qualified drivers and loaders as a means of maintaining flexibility to accommodate soldiers scheduling time off from school or work during the extended training period. It is a testament to the dedication of families, employers, and high school and college ad-

Tier	Feb 1	Feb 2	Feb 3	Feb 4	Feb 5	Feb 6	Feb 7	Feb 8	Feb 9	Feb 10	Feb 11	Feb 12	Feb 13	Feb 14	Feb 15
I															
	Scouts, Mortars + 11 Tank Crews														
II															
	10 Tank Crews														
III															
	4 Tank Crews														
IV															
	7 Tank + 4 Bradley Crews (from the CAV Troop)														
V															
	11 Tank + 2 Bradley Crews (from the CAV Troop)														

**Figure 3 – February 2000 IDT Breakdown**

Range Personnel Support Requirements						
LANE A	LANE B	LANE C	BN	BN ADMIN	BN LOG	TSBn
2 Master Gunners + 1 NCOIC	1 Master Gunner + 2 NCOICs	2 Master Gunners + 1 NCOIC	CDR, XO, S3, CSM, BN MG	2 Admin Personnel	1 Rear Ops OIC	1 OIC + 1 NCOIC
4 Safety NCOs	3 Safety/Proofing NCOs	4 Safety NCOs	4 Range Tower Personnel	3 Bus Drivers	2 PLL Clerks + 1 PLL NCO	16 TCEs + 1 BN Master Gunner
4 -Man Proofing Team	3 Maint Personnel	4 -Man Proofing Team	4 Gate Guards	1 Rear Support NCO	1 Armorer	2 Master Gunners
6 Loaders/ Drivers	1 Commo NCO	6 Loaders/ Drivers	2 MCOFT IOs		6 ATP Personnel	2 Scout PLT OC/Ts
4 Maint Personnel	2 Medical Personnel	4 Maint Personnel			7 LOGPAC Spt Pers	1 Mortar PLT OC/T
1 Commo NCO	1 Armorer	1 Commo NCO			4 Cooks	
3 Medical Personnel		3 Medical Personnel			3 KPs	
1 Armorer		1 Armorer				
<b>TTL = 26</b>	<b>TTL = 13</b>	<b>TTL = 26</b>	<b>TTL = 15</b>	<b>TTL = 6</b>	<b>TTL = 24</b>	<b>TTL = 24</b>
Overall Total Support Personnel = 134 (Active Duty/AGR/Technician = 52)						
Total Estimated Costs For Non-Active Duty Support Personnel = \$53,950						

**TABLE 1 – Range Personnel Support Requirements.**

ministrators and teachers/professors that these soldiers could miss extra time from home, work, or school requirements.

Going into TY00, we determined the battalion had 36 assigned TC/gunner combinations. The brigade's cavalry troop added another six. These numbers would fluctuate right up until the MUTA-9 period for several reasons. Some soldiers were lost due to ETS. The Select, Train, Promote and Assess (STPA) program which guides advancement through the enlisted ranks in the National Guard also "broke" a crew here and there as a vacancy was announced and a soldier moved up. By the time we completed TCPC — our crew formation cutoff date — we were still set with 36 assigned of 44 authorized crews in the battalion. The names assigned to a handful of TC/gunner combinations were not the same in January 2000 as they had been in September 1999, however. (The cavalry troop was manning six of nine authorized crews.)

Another VERY important note about this particular assessment was the number of soldiers it would take to support range operations. This was the domain of the battalion master gunner, battalion command sergeant major, the battalion XO, and the TSBn staff. In their assessment, they provided for 24-hour operation of two simultaneous lanes (Lanes A and C) on the MPRC. For the last two tiers of gunnery, we would also run a third lane (Lane B) to assist with our brigade cavalry troop's M3 Bradley qualification. To ensure a

low-risk assessment in a 24-hour training cycle, this operation required the personnel displayed in Table 1 above.

Besides our own unit personnel, we had active duty assistance. We could not have completed our task to standard if not for the assistance of the 1-394th Regiment (eSB 256) and 3-395th Armor, both of whom make up our TSBn. The TSBn personnel were an integral part of both our preparatory gunnery training and live-fire execution. In addition to assistance with preliminary gunnery training, TSBn NCOs were on our lanes to evaluate and assist with gunnery. This team, from 3-395th Armor from Fort Hood, Texas, provided 16 TCEs who were led by the unit's S3, senior master gunner, and its CSM. (The remainder of this TSBn battalion was processing and training the 49th Armored Division's soldiers for deployment to command Task Force Eagle.) Our own 1-394th Regiment (eSB 256) NCOs augmented this team. Execution of our entire gunnery program provides a very sound example of Total Force integration.

Not listed in the personnel table above were the soldiers who remained at the Fort Polk MATES facility. This facility is the normal storage site for most of our combat vehicles. It also houses additional parts and higher-echelon maintenance personnel. Having round-the-clock access to this area involved the additional duty assignment of a number of National Guard technicians. The additional maintenance support assistance helped keep our OR rate above 80% throughout the training period.

## Preparation

The training mission was executed as shown in Figure 2. Our TCGST train-up in September paid big dividends in October. The battalion's TCs worked out deficiencies in their training techniques for TCGST tasks, and soldiers refreshed themselves on all tasks. This month of train-up ensured that all soldiers present completed the record TCGST with minimal TSBn mentor assistance. We also completed the evaluation in less time than has been the norm. Still, some crewmen were unavailable for the record TCGST and would have to make up their evaluation during the December IDT in conjunction with a 256th BDE CPX.

Our January TCPC also was well executed at the battalion's local training area using our state-and-unit-built, scaled TWGSS range. This training allowed for multiple iterations by crews, and was conducted for everyone within three weeks of the beginning of live fire gunnery. These are important points as the lack of numerous training iterations and non-continuous training time normally hamper Guard training tempo. Upon completion of TCPC, there were still nine crews who had not fired the course and would have to conduct this training prior to any range live fire. (As with our record TCGST, there is always some crew or crewman who has to conduct make-up training. This is always allowed for in training plans.)

Range preparations included scenario development, range coordination, and

ammunition requests by the battalion's AGR master gunner. Once completed by the battalion master gunner, ammunition requests were coordinated by the battalion's AGR logistics NCO. To complete these requests, assistance was also received from brigade and state training personnel.

As plans for the IDT began to firm up, we quickly saw a time benefit for both unit AGR, and Fort Polk operations personnel. In TY99, unit AGR personnel were away from home station for 45 days to conduct seven, separate, live fire gunnery IDTs. To complete the February IDTs, unit AGR personnel were at Fort Polk for a total of 22 days. It is a known fact that unit paperwork requirements suffer when the AGR staff goes to the field because there is simply no one left to complete these actions. Also, Fort Polk forestry personnel are required to conduct controlled burns and other actions down range from the MPRC. These actions cannot be accomplished while live fire gunnery occurs. The forestry team had several weekends freed up by the brigade that normally were requested for its unit's gunnery IDTs.

The personnel listed in Table 1 required close management by name. The battalion and companies' AGR leadership handled this task with great scrutiny. To conserve funding, weekly support personnel list "scrubs" ensured no more than the required number of personnel were placed on orders. (There normally is no set of orders cut for an IDT.) They also closely monitored TC/gunner combinations, assisting with deconfliction of any problems that would keep the pairings from training together. This hands-on approach to personnel management is SOP in active duty units who have 'hands on' their soldiers daily. It was a more intensive requirement than normal for us when we do not have day-to-day contact with more than 90 percent of our soldiers.

## Execution

As a bottom line up front, the battalion qualified more than 90 percent of assigned tank crews with the highest percentage of "Q1" crews since 1993. The cavalry troop also qualified 100 percent of assigned tank and Bradley crews. Additionally, we received at least a "P" rating on all scout and mortar platoon training tasks. (The battalion S3 and two TSBn officers conducted a 72-hour, continuous, tactical FTX with the scout platoon while two

TSBn NCOs evaluated the mortar platoon in their annual MORTEP.)

Range down time for targetry problems was minimal due to the efforts of the Fort Polk Range Control personnel. Our biggest problem seemed to be with the range's moving targets. These targets run on an old rail system and are often damaged by tank main gun hits. The only problem here is the lack of alternate targets and the fact that there is no way to meet engagement standards without them. Consequently, upgrading these targets is a high priority for Range Control.

Personnel management by name was the ONLY way to make this effort work. To that end, the S1 and S1 NCO developed a tracking board system. Each soldier reporting in received a laminated number. This number they retained on their person until it was time to leave Fort Polk. When a number was handed out, a paper tag with the soldier's name, rank and SSN information was put in its place. At a glance, the personnel section could tell how many soldiers were present overall, and within reach was each soldier's personal information if needed. While they all agree this method was NOT perfect, they only need to add simple refinements to this process the next time out. Throughout the 15-day period, however, BY NAME personnel accountability was maintained.

## Summary

The battalion and cavalry troop believe we have cracked the code on conducting IDT gunnery qualification. Use of MUTA-9s provided tankers with the requisite time it takes to meet the challenging gunnery standards of the current version of *FM 17-12-1*. This continuous training time produced a greater-than 90 percent qualification rate with the highest number of Q1 crews in seven years.

This scheme of maneuver also paid great dividends for unit personnel. The amount of time AGR soldiers had to be away from home station — and home — was cut in half. Guard soldiers will also want to know this: there were only two complaints lodged by battalion soldiers to the chain of command in reference to the required, continuous days for the IDT. Every other soldier commented that the pace of gunnery operations was much more conducive to training than in any other IDT they remembered. (Also, soldiers appreciated having the month of November "off" — many of our soldiers like to

hunt, and deer season in The Sportsman's Paradise begins that month.)

Perhaps our biggest dividend is that a proper training balance and focus is now achieved. After the gunnery cycle, the battalion is able to focus all of its efforts on maneuver and AT00, which will be a mission rehearsal exercise at Fort Hood in preparation for our NTC rotation in 2001. Our battalion will continue to conduct MUTA-9s in the future for gunnery qualification for all of its positive training and personnel benefits.

Just as in life, good work in the Army is a team effort. This article speaks of the hard, to-Army-standards work my battalion is known for. These men are the heart and soul of Task Force Geronimo. This article also could not have been finished were it not for the input of LTC Ron Johnson, my battalion commander; MAJ Byron Lafield, the battalion XO; and SFC Kelly Craig, the battalion master gunner. In the spirit of the Total Army concept, MAJ Scott King, team chief from my battalion's Training Support Battalion also weighed in with editorial comments as I worked on this project. My thanks to all of these gentlemen!

MAJ Mike Pryor is a 1984 graduate commissioned early from New Mexico Military Institute. He holds a Bachelor of Arts degree in political science from the University of North Texas. His duty assignments include: cavalry platoon leader, troop XO, squadron adjutant, squadron S3 (Air), and troop commander with 1-124 Cavalry, TXARNG; armor battalion S3 (Air), tank company commander, and S3 with 1-156 Armor, LAARNG; S3 (Air) with 256 eSB, LAARNG; LNO for 2/1 Cavalry, 2AD during REFORGER '87; assistant S3 for 1/4 Cavalry, 1ID during REFORGER '88; and S3 (Air) for 1st Bde, 3AD for their August '89 CMTC rotation as OPFOR. He has graduated from AOBC (Cavalry), SC3, TC3 (M60A3 & M1), NBC Defense, III Corps MOUT Trainer's Course, TLIC, IMPC, AOAC, and CAS3. He works as a civilian contractor with Cubic Applications, Inc. as the systems administrator for 256 eSB and currently serves as the S3, 1-156 Armor, LAARNG.

# Spanish Cavalry Will Acquire Italian Centauro AFVs

by Colonel Antonio J. Candil

After several years of trying, and always restrained by a limited budget, the Spanish Cavalry is finally getting its future workhorse: it is the Italian 8x8 wheeled armored vehicle called the Centauro B1, currently in service only with the Italian Army.

This well-proven design has already shown its capabilities and has performed very well in Somalia and in Bosnia. With the adoption of the vehicle by the Spanish Army, the Centauro is likely to also be adopted by other armies. It was developed in Italy by Fiat Iveco-Oto Melara and integrates much of the technology learned by Italian industry in the course of producing the Leopard 1 Main Battle Tank under license. As a matter of fact, there are a great number of small details in the Centauro that make us to think of the Leopard 1. In the Spanish Army, the Centauro will be known as the VRC-105 (Combat and Reconnaissance Vehicle, armed with a 105 gun) and could become the standard armored system of the Spanish Cavalry in due course.

According to Spanish Army doctrine, the Cavalry is the combat arm that specializes in reconnaissance, screening, scouting, covering force, flank protection, exploitation, pursuit, delay maneuvers, and withdrawal protection. To accomplish these duties, the Cavalry uses a mix of tanks, armored fighting vehicles, and helicopters: tracks, wheels, and wings, as the Spanish cavalrymen say.

For the time being, both wheeled and tracked armored fighting vehicles are mixed in units even at platoon level in the light armored regiments, but apart from the main battle tank, the heaviest vehicle in today's Spanish Cavalry is the ASCOD (Pizarro), a tracked AFV, and the 6x6 wheeled VEC (Scout Cavalry Vehicle). Both are lightly armed and lightly protected. Neither vehicle has great firepower — the main armament in the ASCOD is a 30mm gun and in the VEC, it is a 25mm Chain Gun, both offering low survivability in a high intensity combat environment.

The Spanish Rapid Reaction Force (FAR) has within its structure a Light Armored Cavalry Regiment, which was



**The Spanish Army is acquiring 22 of these 8x8 Centauro vehicles, built in Italy and in current use by the Italian Army.**

**The 25-ton Centauro mounts a NATO-standard 105mm rifled cannon similar to the weapon system on the U.S. M60 series and the early versions of the M1 tank.**

**Some Centauros are also on loan to the U.S. Army for training the new medium-weight brigades (see related story).**



in need of an armored system with enough firepower and protection. It also needed to be capable of being air-lifted with the present medium transport aircraft of the Spanish Air Force, the C-130H Hercules. Several options were available on the world market, but only two seemed to answer the Spanish Army requirements: the Italian AFV Centauro and the French AMX-10RC.

The Spanish Army would have preferred to launch the Centauro procurement program long ago, but funding priority was being committed to the other two main acquisition programs in progress — the MBT Leopard 2 and the AIFV Pizarro/ASCOD. More recently, Spain assumed a bigger role in Allied intervention forces, requiring the Centauro acquisition to be accelerated, despite the budget considerations. The acquisition is not a real program in its

full sense, but an “off-the-shelf” procurement to equip only the Armored Light Cavalry Regiment of the FAR. This will require 22 Centauros for the 8th Light Armored Cavalry Regiment “*Lusitania*,” in the short term, while a major acquisition program, or even coproduction in Spain, will have to wait for a while.

The Centauro's 8x8 high mobility and its still powerful NATO standard 105-mm main gun in a fast, 25-ton AFV answers the needs of reconnaissance forces and fills the gap between the heavy main battle tanks and lighter armored vehicles.

The Centauro's 8x8 wheels are fitted with an automatic variable inflatable pressure system, CTIS, controlled by the driver, that can provide a low ground pressure of 1 Kg/cm<sup>2</sup>. Due to



the magnificent FIAT/IVECO V6 520 CV diesel engine, Centauro has an overall power/weight ratio that places the vehicle in the lead of the best light armored mobile systems in service by Western armored forces.

The Centauro has been proven extensively in all kinds of terrain, sand, mud and especially rocky grounds with excellent results. In rocky terrain, wheels wear down less than the conventional rubber pads normally used on the Western types of tracks. While a broken track fully immobilizes a tank, the Centauro can still move, even with one or more damaged wheels. The run-flat tires can be used even if they have been damaged by gun fire.

With a German ZF automatic gearbox linked to a powerful diesel engine, the Centauro can negotiate road or motorway movements at high speeds — over 100 kms per hour — exceeding considerably the timing and deployment capabilities offered by main battle tanks and other armored vehicles. In low intensity conflicts — or in peacekeeping operations — such capability would prove extremely useful when long distance movements are required.

With the standard NATO 105/51 rifled gun (the standard cannon on the M60 and early M1-series tanks) as its main armament, the Centauro is the most powerful light armored reconnaissance vehicle deployed so far, and is able to engage not only all the vehicles of its kind, but even most main battle tanks in service. The gun can fire all existing types of ammunition, especially the latest generation APFSDS rounds and even the new high-explosive HE types that are under development in several leading ammunition-producing countries. Of course, it also shoots all the conventional ammunition that is NATO standardized and in service for the 105/51 main gun. The Centauro's full combat load is 40 main gun rounds, guaranteeing a high degree of sustainability in combat, with 14 rounds ready for immediate use inside the turret, while 26 rounds are stored in a special compartment in the hull. A first hit-kill probability is guaranteed by the employment of a highly efficient, two-axis stabilization system as part of the fire control system. A thermal sight provides for night combat, serving both the gunner and the tank commander.

The Centauro has a conventional loading system and a crew of four — commander, gunner, loader, and driver —

accommodated in a well organized but roomy fighting compartment that offers the same firing speed and combat readiness as most main battle tanks. As secondary armament, the Centauro has two MG3 7.62mm NATO machine guns, one coaxial to the main gun and the other for external use, to be manned by the tank commander. Standard equipment for the Spanish Army in most of its armored vehicles, the Wegmann-type smoke grenade launchers are integrated in the turret, four in each side.

While protection is not on a par with the armor of main battle tanks, it is possible as an option to install add-on armor of different types. The Spanish Army is already considering this possibility so that the vehicle can be tailored to the expected threat. The Spanish company, Empresa Nacional Santa Barbara (ENSB) — soon to merge with General Dynamics — will provide such an armor package when needed, including reactive armor. The Centauro is also equipped with NBC protection and a fire-suppression system.

Ever since the so called New World Order started and defense budgets were severely reduced, the Spanish Cavalry has been under permanent scrutiny and perhaps it is the branch of the Spanish Army that has suffered most. Today's Spanish Cavalry bears only a vague resemblance to its proud past while its missions and role have not diminished. The organization once fielded almost 11 cavalry squadrons for home defense, and two independent armored brigades, plus the divisional units — three more light armored cavalry regiments. Today, only an independent light armored brigade — Armored Cavalry Brigade n.2 "*Castillejos*," plus a light armored regiment — Light Armored Cavalry Regiment n.14 "*Villaviciosa*" (integrated in the mechanized infantry division "*Brunete*") besides the already mentioned Regiment "*Lusitania*" of the FAR, remain active and can be considered operational. Under the new strategic environment, the Spanish Cavalry has been extensively involved in the Balkans, either in Bosnia or in Kosovo, while its equipment and doctrine were not entirely adequate to the new tasks, specifically for the scouting/recce jobs in the out-of-area and other-than-war operations environment.

One interesting development is the *de facto* disappearance of the divisional level in the organization of the Spanish Army. Certainly there is still one division-type unit in the Spanish Army, but

the philosophy now, as in most of the NATO countries, is to employ mainly brigade-size forces, integrated in a multinational component. The new policy is also to allow the modern mechanized infantry brigades to provide for their own security and scouting, taking over the responsibilities once carried out by cavalry units. This is perhaps not the most effective approach, but it is mandated by budget and personnel concerns.

The disappearance of the so-called traditional enemy and the increasing contribution of the Army to peacekeeping or peacemaking missions, has helped make the role of the Cavalry increasingly ambiguous and vague. This situation has led ultimately to the disappearance of the divisional level and has made the brigade-size unit the usual basis in today's European armies. At the same time, these missions have made redundant the traditional operational mission of the cavalry; in most cases, cavalry units were doing no more and no less than mechanized infantry units. This is not intended to be a criticism of the mechanized infantry, but only makes it obvious that the Cavalry — without a clear and different organization, without specific means and particular weaponry, and without a specific role and missions to accomplish — was on the verge of being considered redundant by the budgeteers in the majority of Western countries.

The Centauro AFV will make it possible for the Cavalry to assert its role on the modern battlefield and offers an adequate means for participation of light armored forces in a low intensity conflict of the Kosovo or Bosnia type.

There is no doubt that the introduction of the Centauro AFV will be criticized in some circles of the Spanish Army as another source of logistical problems, adding more difficulties to the present situation where Leopard tanks and Pizarro infantry vehicles have to live together in harmony, without forgetting the still impressive mixed fleet of M60 tanks, M113s, and wheeled BMRs and VECs.

The procurement of the Centauro was finally given a green light by the Spanish Council of Ministers on June 25th, 1999, approving at the same time a total budget of 70 million U.S. dollars to acquire the whole batch of 22 vehicles, plus a limited integrated logistic support package. Deliveries to the Spanish Army will run throughout the present year 2000 — with just seven

vehicles — and will end in the year 2001 with the remaining 15 vehicles.

The Spanish and the Italian governments agreed on 100 percent industrial offsets, so that the Italian consortium, Fiat Iveco-Oto Melara, will generate work for Spanish companies during the next seven years, 45 percent of which will be directly linked to the production of the AFV Centauro and 55 percent related to other activities. Among the latter, Empresa Nacional Santa Barbara (ENSB) will produce about 100 chassis and 50 turrets for the IFV VCC-80 Dardo to be delivered to the Italian Army. INDRA-EWS, the leading Spanish electronics company, linked to Raytheon, will carry on the maintenance of all the optronic equipment integrated in the Centauro, while IVECO/Pegaso of Spain will be responsible for the logistic support of the vehicle during its entire life cycle. The whole technical documentation, publication of interactive manuals, and computer-based training aids are being developed by Spanish companies, following the operational requirements established by the Spanish Army.

INDRA Simulation Systems is also developing a tactical and combat simulator for the Centauro that will be the first in its kind and it is expected to be adopted by the Spanish Army. It may be also chosen by the Italian Army in the future. INDRA has been also chosen as prime contractor for the simulator adopted by the Italian, Spanish and U.S. navies for the Harrier AV-8 Plus and it is already a well known company in Italy, Spain, and in the U.S., where recently it was awarded a contract for the upgrading of the U.S. Navy simulators for the F-14.

COL Antonio J. Candil graduated from the Spanish Military Academy in 1972 and was commissioned in Armor. He has served as a tank platoon commander in the Spanish Western Sahara in 1973-76, and is experienced as an XO and company commander. A graduate of the Armor Officer Advanced Course at Fort Knox, he is also a graduate of the Spanish Army Command and Staff School, and the Italian Army's War College. He has been assigned to several posts abroad, in Belgium, Italy, the UK, and Germany, and is now director of the Leopard 2 Program with the Spanish Army Logistics Command.

# Initial Brigade to Receive German, Italian "Loaners"

by Jim Caldwell, TRADOC PAO

Two more countries are loaning the U.S. Army some examples of their own army's wheeled armored vehicles for collective training of the first of the new Initial Brigade Combat Teams at Fort Lewis, Wash. Germany is sending examples of its Fox and Lynx, wheeled infantry carriers and reconnaissance vehicles, and Italy is sending examples of the Centauro, the eight-wheeled armored car carrying the same NATO-standard 105mm cannon that was mounted on the early models of the M1 tank.

According to the Training and Doctrine Command, the vehicles were to have arrived in September and would be used as "surrogates" for the vehicles that will eventually be selected and acquired for the new units. Until these Interim Armored Vehicles (IAVs) are acquired, the foreign vehicles, along with 32 Canadian Light Armored Vehicle III (LAV IIIs), also on loan, will allow soldiers in the new unit to begin collective training.

Army leadership had expected to make its choice by the end of September, but the decision has now been postponed until October.

"The loaners enable IBCT soldiers to start working on doctrine and tactics, techniques, and procedures (TTPs) so they can transition smoothly to IAVs," said CPT Alfred Jackson, a project officer who helped develop the loan agreements. Jackson is also an IAV team staff officer for the Training and Doctrine Command System Manager for IAV and Future Combat System. The "loaner" agreements for the German and Italian vehicles will expire in the spring of 2002, and for the Canadian LAVs in January of that year.

An Army source selection process has been underway to find suitable Interim Armored Vehicles, to include infantry carriers, large caliber mobile gun systems, reconnaissance vehicles, and carriers for an antitank guided missile system. The process began last winter when manufacturers sent their candidates to Fort Knox for demonstrations,

but the Lynx reconnaissance vehicle and the Centauro were not among the 39 vehicles on demonstration. The Centauro was recently selected for acquisition by the Spanish army. (See related story in this issue. —Ed.)

The Centauros will act as surrogates for the mobile gun system (MGS) and the anti-tank vehicles, the Lynx will act as surrogate in the reconnaissance vehicle role, and the LAV IIIs and Foxes will be used as infantry carriers and command and control vehicles. The Lynx and Fox mount 20mm cannons, the LAV IIIs are armed with 25mm Chain Guns.

Before the vehicles arrived at Fort Lewis, they were safety-tested at Aberdeen Proving Ground, Md., and eight of the Foxes, two Centauros, and 21 LAVs were equipped with a digital communications system called Force XXI Battle Command Brigade and Below.

The IBCT currently has 16 LAV IIIs and was scheduled to receive another 16 in September to be surrogates for infantry carriers and command and control vehicles.

Some current U.S. Army vehicles will also serve as surrogates, according to Jackson. "The IBCT will be using some of the M113 tracked vehicles they have at Fort Lewis, plus some HMMWVs and trucks, as surrogates," he said.

"The Army's plan is that, as the first IBCT receives IAVs off the production line, the loaner surrogates will be transferred to the second IBCT so it can begin the transformation process," Jackson said.

The first IBCT (3rd Brigade, 2nd Infantry Division) is scheduled to be operationally capable by the end of 2001. The second (1st Brigade, 25th Infantry Division) will begin reorganization in 2001.

Whatever armored vehicles are finally selected, they will be lighter than armored vehicles in today's mechanized units. The concept is aimed at making

the new brigade combat team more maneuverable and agile while it retains great lethality. The weight reduction, it is hoped, will enable a brigade to be deployed anywhere in the world within 96 hours, then operate and win in a range of missions from small-scale contingencies to a major theater war as part of division operations. The requirement that the vehicles be transportable in a C-130 will ensure that the brigade can be flown in close to the expected area of operations, if there are no suitable airports.

Still over the horizon is the Future Combat System (FCS), now being studied by Army scientists who hope to provide the same crew survivability and lethality of today's Abrams tanks and Bradley Fighting Vehicle-equipped units in a smaller, lighter vehicle. The scientists think FCS capabilities will be demonstrated by early 2006, which will keep the Army on schedule to transform to the objective force between 2008 and 2012.



Among the vehicles being used to train the new medium brigades at Fort Lewis are these European systems on loan from their respective armies. The Italian Centauro, top, will act as surrogate for the force's mobile gun system. The German Fox, center, will stand in as an infantry carrier, and the Lynx, bottom, will serve as a reconnaissance vehicle.

## LETTERS from Page 4

served as brigade XO, and on a daily basis learned something new from him. Many of those lessons, and especially those about the role of NCOs in setting and enforcing standards in units, I had learned earlier in my career from other outstanding NCOs, but somehow over time had forgotten their importance. I also had to relearn the lesson of the importance of officers conforming to all those same standards.

On a personal level, I am grateful that CSM Ken Preston reminded me (sometimes a bit abruptly) that it was important for me, as the brigade XO, to set the example in the motor pool, the NTC Dust Bowl, or on the simulated battlefield. In units, discipline is the key to success and survival, whether the task is performing PMCS to standard in the unit motor pool, conducting a night passage of lines at the NTC, or performing checkpoint operations in a PKO environment. It is critical to the survival of our Army for the officer corps to develop and support our NCO corps, which — much more than money or technology — is what separates the U.S. Army from the rest of the world's militaries.

BOB NEWMAN  
LTC, IN

Defense and Army Attaché  
U.S. Embassy Sanaa, Yemen

### Reader Offers Caption Correction On Photo in 4th AD Article

Dear Sir:

I was pleased to see MAJ Donald Vandergriff's interesting article on the 4th Armored Division in the September-October 2000 issue. In spite of the division's record of accomplishment, it is not often covered in print, and there is still no thorough history of this distinguished unit. On a minor note, the photo on page 23 does not show a column from 4th Armored Division. The tank is a M4A1 (76) from 66th Armored Regiment, 2d Armored Division on 2 September 1944 in Aubencheul-au-Bac. This town is north of Cambrai near the Belgian border where First Army was deployed, not in Lorraine where Patton's Third Army was deployed. Last year, I went through the Signal Corps photo files at National Archives, the Patton Museum, and the Military History Institute at Carlisle Barracks looking for photos of the 4th Armored Division in combat in Lorraine. There aren't very many, but most appear in my book on the Lorraine fighting that was published in September 2000 in the Osprey Campaign series (*Lorraine 1944: Patton vs. Manteuffel*).

STEVE ZALOGA  
Stamford, Conn.

### Mail Mix-Up in Last Issue Delayed Delivery of *ARMOR*

**NOTICE TO READERS:** There was a malfunction in the machine that printed subscriber addresses on the back cover of many copies of the September-October issue of *ARMOR*. As a result, one or more lines of the subscriber's address were not printed on thousands of copies and these were not delivered by the Post Office.

It took some time for this problem to be discovered and rectified with an additional printing and mailing. We are sorry for any delay you may have experienced in receiving your copy. If you did not receive your personal copy of this issue, please contact the U.S. Armor Association at 502-942-8624. If your unit did not receive its official copy, contact Mary Hager at *ARMOR* (DSN 464-2249 or commercial 502-624-2249).

### Reunion

The 11th Armored Cavalry (Active Duty and veterans) will celebrate its 100th Anniversary, February 1-4, 2001 at the Riviera Hotel/Casino in Las Vegas. For more information contact Gene Johnson, 4054 Venita Court, Las Vegas, NV 89120-1442; (702) 456-3218; or [gene677@aol.com](mailto:gene677@aol.com).

# E-Mail Rules of Engagement: A Modest Proposal

*Sure, it's easy, but are we compromising our leadership principles?*

by Major Joseph S. McLamb

"Management by e-mail" is something of an emotional term in our Army today. On the one hand are junior officers and NCOs who are frustrated that e-mail allows their seniors to send a rapid stream of information and guidance without the personal interaction that is the hallmark of effective direct leadership. On the other hand are the more senior leaders, who find that e-mail is an extremely effective and efficient means of managing information. If you think e-mail is bad, they might say, you should have been here before we had it.

Both schools of thought have real merit. E-mail is, in fact, a powerful tool of information management. The real issues with e-mail are more correctly identified as the methods that leaders use to employ the technology, not the technology itself. Perhaps a short vignette will illustrate this.

## A Purely Hypothetical Scenario

It all started, as most such incidents do, with a great idea. Since the details of the great idea are not important, we'll call it simply Idea X. For our purposes, we'll assume that Idea X had real value, the kind of idea that people look at several years later and say, "I can't believe we ever did this any other way." When someone brought Idea X to the attention of Major General A, he immediately recognized the value of the idea. What wasn't immediately clear, however, was the feasibility of Idea X. Although his gut told him that the costs would be negligible, the general decided to let his staff look into the issue.

Since Major General A was a busy man, he turned to his laptop computer and sent an e-mail message to the chief of staff. It read:

**To: COL B**  
**From: MG A**

Bob:

This Idea X looks like a good deal. What would it take to make this work? Get back to me by the end of the week.

As you might imagine, COL B was also a busy man. He read the general's e-mail, along with about 46 others, during what his calendar euphemistically referred to as "lunch." He visualized a short e-mail response to the general that would briefly outline the effect and cost of implementing Idea X. Since the idea dealt with training, he decided to forward it to the G3. As he thought about it, however, he remembered that the G3 had a tendency to fire off hasty responses to questions from the general. Hitting the "forward" button on his e-mail, he sent the following to COL C:

**To: COL C**  
**From: COL B**

Jim:

Please respond to the below. Have all the pertinent background data so we can answer any questions from the CG.

Colonel C saw the e-mail well after the hour that he had told his wife he would be home that evening. It occurred to him that he already knew the answer to the CG's question, since it happened that his own area of expertise involved the very issues raised by Idea X. He started a quick e-mail note in response, then thought about the chief's caveat. After some reflection, he sent the below to LTC D, a hard-working staff officer.

**To: LTC D**  
**From: COL C**

Ted:

Put together a brief for the CG on the below. Let me see it by Thursday. Plan on less than 30 minutes.

LTC D had come in early to knock out some work prior to PT when he saw the G3's e-mail. The answer to the CG's question seemed quite obvious to him, and he secretly wished he could just talk informally to the CG for two minutes to meet the requirement. Based on the G3's guidance, however, he decided that he should have all his ducks in a row by Thursday. He sent the following to MAJ E:

**To: MAJ E**  
**From: LTC D**

Mike:

Looks like this could get hot. Get with the brigade 3s and find out what the impact of this will be on them. I need to see draft slides NLT COB on Wednesday.

MAJ E got the message just after PT, and realized that this project was going to cause him some pain because he already had a full day's work ahead of him. His only hope of meeting the Wednesday suspense would be to have the brigade input by the end of the day. That would allow him to knock out the draft slides late that night. As he changed out of his PT gear, he sent the following message:

**To: Brigade S3s**  
**From: MAJ E**

Guys:

Need your input NLT 1700 today. Use standard division slide format. Keep main briefing slides down to NMT 20; use backup slides as necessary. Please send me the name of your AO NLT 1200 today.

And so it was that CPT F, assistant operations officer for 2nd Brigade, learned at 1015 that his entire day would now be devoted to preparing a briefing on a topic he had never heard of until that moment. The brigade S3 printed the entire e-mail message, which in its final form looked like this:

**To: Brigade S3s**  
**From: MAJ E**

Guys:

Need your input NLT 1700 today. Use standard division slide format. Keep main briefing slides down to NMT



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20; use backup slides as necessary. Please send me the name of your AO NLT 1200 today.

**To: MAJ E**  
**From: LTC D**

Mike:

Looks like this could get hot. Get with the brigade 3s and find out what the impact of this will be on them. I need to see draft slides NLT COB on Wednesday.

**To: LTC D**  
**From: COL C**

Ted:

Put together a brief for the CG on the below. Let me see it by Thursday. Plan on less than 30 minutes.

**To: COL C**  
**From: COL B**

Jim:

Please respond to the below. Have all the pertinent background data so we can answer any questions from the CG.

**To: COL B**  
**From: MG A**

Bob:

This Idea X looks like a good deal. What would it take to make this work? Get back to me by the end of the week.

With only the minimum amount of sniveling to the boss, he left the S3's office and went back to his desk. He called his wife and told her he would miss dinner tonight, since his plan to finish the QTB slides prior to 1900 had been fatally wounded. A non-branch qualified captain would now spend the rest of the day attempting to interpret the guidance of a two-star general.

### **A Modest Proposal**

If this fictional story sounds fantastic to you, it probably means that you have not checked your e-mail lately. Although this version is a bit of a hyperbole, such incidents are far from unusual. The great advantages of an immediate, universal communication capability throughout the Army are often offset by our failure to apply the basic rules of communication that we teach young officers and NCOs. As both a victim and a perpetrator of poor e-mail communication, I would like to offer some basic rules of engagement for your consideration. Like all rules of thumb, these rules will have exceptions, and occasions when violating them may be the correct course of action.

*Rule 1: Be clear and be brief. If you can't do both, then be clear.*

The great lure of e-mail is that it is quick. We should recognize, however, that the speed of the communication medium is not connected to the time required to draft a message that is characterized by clarity and brevity. The reputation of e-mail as "quick and easy" has caused us, perhaps unconsciously, to think of communication itself as quick and easy. All of military history teaches us that this isn't true. Communication is a tough business, regardless of how efficient your communication medium may be. There is no substitute for clear, concise writing. "Please respond with a paragraph

or two in e-mail format" is a phrase that, if used when appropriate, could save the Army thousands of man-hours of wasted effort.

*Rule 2: Don't forward guidance from higher to a subordinate without comment.*

Admittedly, this seems like a great idea, since it increases general situational awareness. Think back to our example, however. As each person forwarded the e-mail, he assumed that clear and concise guidance could be extracted from the higher headquarter's guidance. Unfortunately, this wasn't the case. The end result was a junior officer attempting to interpret guidance that was never meant for him. The responsibility for clear and concise communication rests at every echelon. If you can't capture your higher's guidance in your own words, it's a good sign that you don't understand it well enough. To pass it on, as is, to your subordinates simply multiplies the problem, and is essentially irresponsible.

In our earliest days in the Army, we all learned an even more basic reason to avoid forwarding guidance to subordinates. Everyone knows that leaders should never pass orders to subordinates with the phrase, "Okay, higher has directed that we..." The lure of e-mail has apparently caused us to forget this basic rule of leadership.

*Rule 3: Don't forward a subordinate's response to a higher headquarters.*

The reasons for this match those of Rule #2, with the added fact that forwarding a subordinate's response looks like you're passing the buck. Subordinates will be hesitant to respond openly if they know that their responses routinely end up several echelons higher.

*Rule 4: Don't use e-mail to admonish a subordinate.*

Perhaps the very first lesson we learn as leaders is "praise in public, admonish in private." E-mail is not a private communication medium, as all too many examples have demonstrated. Admonishment requires a very personal touch, if the goal is to improve performance. Blasting a subordinate through e-mail is perhaps one of the very worst ways to influence behavior. A leader who makes this his routine procedure will soon find that he is having the opposite of his desired effect.

### **Making the Most of the Technology**

E-mail is a powerful tool in the hands of an effective leader. As often happens with emerging technology, however, the Army as an institution has fielded the hardware without fully understanding its effect on the software that lies between the ears of our soldiers. In our efforts to make the technology as efficient as possible, we've set aside some basic rules of leadership. Not surprisingly, the result has been subordinates who are dissatisfied with their leaders. By applying the tried and true leadership rules of days gone by, however, we can harness the power of e-mail without suffering from its inherent dangers.

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MAJ Joseph McLamb is an infantryman currently serving as the commander of O Troop, 3rd Squadron, 16th Cavalry Regiment. His previous assignments include observer/controller at the Joint Readiness Training Center, company commander in the 101st Airborne Division (Air Assault), and tours at the National Training Center and Korea.

# Endangered Wolverine Gets Limited Funding

by Major J. Gary Hallinan, Assistant Program Manager, Wolverine

Enough funding has been restored to the Wolverine bridging system to permit fielding of a dozen to the 588th Engineer Battalion, 4th Infantry Division at Fort Hood, Texas in January 2001, just in time to participate in the division's capstone exercise at the National Training Center in March.

While the Army is transforming to become lighter and more transportable, support to the "legacy" maneuver force continues. PM Wolverine, Deputy for Systems Acquisition (DSA), U.S. Army Tank-automotive and Armaments Command (USATACOM), will field 12 Wolverines, the direct result of restored FY 2000 funding for low-rate initial production (LRIP) Increment 3, a congressional plus-up in Fiscal Year 2001 to procure 12 additional Wolverines on the current LRIP contract with General Dynamics Land Systems, and the Wolverines' successful demonstration during the limited user test conducted earlier this year.

Wolverine is a bridging system mounted on an M1 tank chassis that is capable of spanning a 24-meter gap and supporting the 70-ton military load class. Several milestones remain to be crossed to complete the production and fielding of the remaining Wolverines. The system will undergo a follow-on operational test and evaluation next summer at Fort Hood. This test will formally evaluate the entire system, including the soldiers that interact directly with the Wolverine as well as qualitative reliability, availability and maintainability (RAM).

Pending successful completion of this test, the Wolverine program will be scrutinized during the Milestone III decision, currently scheduled for 1QFY01. The Milestone Decision Authority (Deputy for Systems Acquisition, USA-TACOM) will base this decision on several criteria to determine if the program is ready to move on to the next phase of its life cycle, full-rate production. Optimal full production will allow fielding 12 Wolverines per year.

The Wolverine is a one-for-one replacement for the AVLB and is a significant improvement over older existing technology. It brings many new capabilities to the Force XXI engineer, including improved readiness compared to its predecessor, the AVLB, better mobility given its

M1A2 SEP-compatible chassis, and the capability to cross 73 percent of gaps theater-wide, compared to the AVLB, which can only cross 54 percent. The Wolverine's 90 percent compatibility with the M1A2 SEP also significantly reduces logistics support.

The Wolverine's employment in the first digitized division exercise at the National Training Center in March is not a formal test of the system but will help determine how the system will interact with the digitized force.



The Wolverine, mounted on an M1A2 SEP tank chassis, is capable of spanning gaps up to 24 meters wide.



# Abrams Update: Vital and Improving

by Colonel James H. Nunn, TRADOC System Manager for Abrams

Since the Army is focused on Interim Brigade Combat Teams (IBCT) and the Objective Force, some seem to think the Abrams program is trending downward. Let me dispel that rumor by pointing out there will be more improvements in the Abrams force over the next 10 years than at any other time since the original fielding of Abrams in the early 1980s. While the Army transforms to reach a full-spectrum future, the Abrams tank continues to provide a unique and decisive warfighting capability. Tanks today, and in the future, are the Army's best systems to close with and destroy enemy forces through maneuver and precision fires.

We recently started fielding the M1A2 SEP to the 4th ID and will continue to field M1A2 SEPs to armor battalions until 2011 or later.

The M1A2 SEP has a second-generation FLIR with 50X magnification on the gunner's primary sight and commander's independent thermal viewer, the Force XXI Battle Command for Brigade and Below (FBCB<sup>2</sup>) system, a thermal management system, and the latest armor package, making it the most lethal land combat system in the world.

Not everyone will get an M1A2 SEP, but don't despair. We are rebuilding M1A1s and conducting selective upgrades, such as replacing analog with digital systems and adding FBCB<sup>2</sup> to improve situational understanding and provide far-target locating capability. The Abrams rebuild program, called Abrams Integrated Management (AIM), is an innovative teaming of the prime contractor, General Dynamics Land Systems (GDLS), with Anniston Army Depot to overhaul the tank to like-new condition. AIM increases readiness, reduces operating and support costs, standardizes configurations, and minimally sustains the Abrams industrial base.

With FBCB<sup>2</sup>, tankers receive the information needed to provide leaders a common relevant picture of the battlefield, scaled to their level of interest and tailored to their special needs. Tankers with FBCB<sup>2</sup> can see friendly

vehicle icons on a digital map, with overlays, and send digital reports.

The far-target locating capability allows the crew to determine the range to an enemy vehicle with the tank's laser rangefinder, determine an accurate grid location, and add an icon to the digital maps of other tanks. The crew can also use this data to send a digital call for fire. The M1A1D may not have the same capabilities as the M1A2 SEP, but it is still a great tank.

Since we fielded the Abrams in the early 1980s, we have not made any major improvements to the engine. As I visit Armor units, the reliability of the Abrams' engine is always an issue. Throughout the Armor Force, tankers are concerned over the rising cost of maintaining the tank fleet and the impact of availability on training and combat readiness.

The last new engine was produced in 1993 and since then we have just been rebuilding engines. Each time we rebuild we lose a little capability, and we are still working with 1970s technology. To fix this problem, the Army is going to give the Abrams a new engine that is four to five times more reliable and improves fuel consumption by about 35%. This is a major Army program and demonstrates our commitment to the Armor Force and its importance. Improving the reliability and fuel efficiency of the Abrams tanks benefits the Armor Force by increasing training and operational readiness while reducing the logistics footprint required to maintain the combined arms team in the field. You should be excited about this program because it is central to sustaining the Abrams fleet and is critical to providing tankers with the hardware needed to win our Nation's wars.

**(Editor's Note:** As this issue was being prepared, it was announced that the new engine will also be a turbine, rather than the diesel replacement that was widely expected. Honeywell/General Electric will provide its LV100 turbine, an engine claimed to offer 30 percent less fuel consumption, 43 percent fewer parts, and 100 kg less weight. The engine had been developed for the

Army's Advanced Integrated Propulsion System program.)

New or rebuilt tanks without munitions improvements are sub-optimal. To be decisive, we must enable these great platforms with improved munitions that increase lethality and extend the close combat fight. Tankers in Korea and other theaters need a canister round to deal with dismounted RPG ambushes in complex terrain (*see related story, page 18*). We need a round that provides rapid area suppression. Using the coax machine gun requires lasing, dumping and pattern burst, which make it a slow area-effect weapon. Getting an effective canister round to the field is one of the top priorities of the Armor Center.

To maintain lethality overmatch, we also need to continually improve our sabot round to ensure we can penetrate any known enemy armor at greater distances. The M829E3, which goes into production in FY02, gives the Armor Force the punch it needs to win on future battlefields. In addition to a sabot round that can kill anything within the 3-4K range, we also need to expand our battlespace by producing a round that can hit targets at longer ranges. Tank Extended Range Munitions (TERM) give us the capability to leverage improved sights and digitization to extend the close combat fight and destroy enemy forces before they can come within effective range of our tanks. Adding a beyond-line-of-sight capability significantly improves tank survivability and loss/exchange ratios while expanding the tank's role on the battlefield.

The Abrams program is alive and well. While others are getting a lot of press, we are quietly upgrading our systems to ensure that our tankers dominate on any battlefield. The 4th ID is crossing the LD enroute to the first digitized division objective and others will follow. There is a lot of activity in the Abrams program, and we will continue work to ensure that Abrams maintains overmatch across the full spectrum. Abrams systems are projected to be a vital part of the Army for the next 20-30 years.

**Blood Brothers: Hiram and Hudson Maxim – Pioneers of Modern Warfare** by Iain McCallum, Chatham Publishing, London, 1999, 200 pages; \$36.95 retail, \$29.56 online.

By the end of 1914, any possibility of large-scale maneuver on WWI's Western Front had become a "battlefield stalemate," a term used to describe the maneuver deadlock resulting from the effective use of the Vickers-Maxim machine gun, the creative emplacement of barbed wire and trench obstacles, and the increasingly accurate employment of high-explosive artillery fire. As a community of professional soldiers, we certainly harbor an appreciation for the effectiveness of these elements. It is certainly not necessary to understand the trials and difficulties experienced by inventor Hiram Maxim in order to appreciate the weapon's effectiveness, but the historical background provided by author Iain McCallum does place the achievement in a clearer light.

McCallum uses a combination of primary sources and contemporary accounts to tell the story of the rise to international fame of Hiram Maxim, known to most students of military history as the inventor of the modern machine gun. No less a historian than Basil Liddell-Hart said, "His name...is more deeply engraved on the real history of the World War than that of any other man. Emperors, statesmen, and generals had the power to make war, but not to end it. Having created it, they found themselves helpless puppets in the grip of Hiram Maxim who, by his machine gun, had paralyzed the power of the attack. All efforts to break the defensive grip of the machine gun were in vain; they could only raise tombstones and triumphal arches."

Heady praise for one man, but the road Maxim traveled enroute to such praise was a difficult and uncertain one. This work takes the reader on Hiram Maxim's journey from humble, barely literate beginnings in rural Maine to New York City, where by virtue of hard work and self-study he became involved in the race to develop practical electric lighting for indoor use in homes, losing by scant days to another famous inventor of the era named Edison. Focusing his efforts on commercial lighting applications, and never losing his drive for independent inventive thinking, Maxim was retained by an engineering consortium which sent him to Europe as its representative. While there, prohibited by contract from developing new lighting applications, he turned his energies towards the development of automatic weapons. I found it interesting that the inventor of such a paradigm-changing instrument basically stumbled onto the situation. Based in Paris while serving as the engineering firm representative, Maxim experienced firsthand the air of despondency in which all of France was immersed after its defeat in the Franco-Prussian war. This malaise served as a catalyst, spurring his Yankee ingenuity and backwoods familiarity with firearms, combined with his natural inventive inquisitiveness. Given his contractual prohibition

against further lighting developments, Maxim was basically "forced" into a career in weapons development.

The reader is also introduced to the "other" Maxim, Hudson Maxim, who was an incredibly talented inventive genius in his own right. He chose to focus his efforts in the area of explosives development. This was just prior to the onset of hostilities in 1914. One brother would make his mark developing an infantry support weapon, while the other would radically change the way artillery shells are delivered on the battlefield and in naval applications. The book provides interesting details about both careers as they developed, first in tandem, and then separately as personalities and egos got in the way. It is a readable study, with both quotes and pictures, which enhance the narrative and complement the uniquely human approach the author adopts. I was left with a better understanding of the complexities of pre-WWI weapons development and the impact several truly unique innovations had on that conflict. For its value in enhancing one's historical perspective, I recommend *Blood Brothers* as a book worth reading.

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**After D-Day: Operation Cobra and the Normandy Breakout** by Lieutenant Colonel James Jay Carafano, Lynne Rienner Publishers, London, 2000, 294 pages, \$55.00.

Students of World War II are familiar with the story of Operation Cobra. After two months of difficult and costly fighting in the Normandy beachhead, American forces in General Omar Bradley's First Army, particularly Major General J. Lawton Collins' VII Corps, succeeded in piercing the thin German line west of St. Lo and pushing deep into France out of the Normandy hedgerows. Traditional accounts of the operation focus on either American tactical advances that led to the victory, such as the preponderance of American air power, or the "rhino" hedgerow-busting tank, or the great ability of senior American military leaders such as Bradley and Collins. Lieutenant Colonel James Carafano takes issue with this historiography on the successful breakout from Normandy in late July 1944. In his refreshing analysis of the American operation, *After D-Day: Operation Cobra and the Normandy Breakout*, Carafano emphasizes the ability of American commanders to take advantage of what he calls "operational flexibility" to overcome battlefield challenges. A unique element of his argument is that it was the mid- to lower-level leaders, such as field grade officers, senior company grade officers, and senior noncommissioned officers, who were the most crucial in the success of this operation.

To support this, Carafano meticulously examines the operations of individual regiments and battalions of the attacking VII Corps and systematically rebuts various

opposing arguments. A striking argument that he offers is his stern critique of senior American leaders. Carafano paints Collins, the VII Corps commander, as an impulsive and rather reckless leader, whose troops succeeded in spite of his actions, rather than because of them. General Bradley's handling of the initial plan, and the carpet-bombing fiasco that led off the attack and doomed so many Allied soldiers, also come under fire.

In this study, Carafano does two things exceptionally well. First, he does an excellent job of analyzing the battle at the battalion and regimental level, while still maintaining logic and coherence. Second, he takes the time and effort to address all of the key aspects that figure into an American operation, devoting time to logistics, air power, troop morale, discipline, and unit history. From the American perspective, this is a very comprehensive work. But Carafano does not delve nearly as deeply into the German perspective. This, to be sure, is not his intent and is not cited as a criticism. While he doesn't ignore the general German decision-making process, Carafano's book remains an examination of the American operation.

One minor criticism needs to be mentioned: the maps in this book are dreadful. Carafano does recognize this problem in his bibliography and points out the best remedy — going to Martin Blumenson's *Breakout and Pursuit* in the Army's "Green Book" series, *The U.S. Army in World War II*, and copying the needed maps.

*After D-Day* remains, however, a wonderful new look at Operation Cobra, and Carafano's treatment provides a challenging approach to the operation. He succeeds in demonstrating the value of "operational flexibility," as demonstrated by the field grade leaders of VII Corps. As such, it will be of great value to any armor leader, but particularly those who are preparing to assume higher responsibility in the force and who are moving either from the company- to the field-grade level or from the junior- to the senior-NCO level. Carafano's account provides a first-rate example of just how critical these leaders can be in combat.

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**Hap Arnold and the Evolution of American Airpower** by Dik Alan Daso, Smithsonian Institution Press, Washington, 2000, 314 pages, with index; \$29.95.

Air Force pilot and historian Dik Daso opens this book with an interesting cultural — or perhaps political — observation on our own times. He states in the introduction that when he graduated from the Air Force Academy in 1981, the established "Father of the Air Force" was Billy Mitchell. Even those unfamiliar with the history of the interwar U.S. Army will likely remember Mitchell's



demonstration of air power over warships when, in the summer of 1921, he sank the German battleship *Ostfriesland*, which had been seized after WWI and was anchored as a bombing target. Most also remember that Mitchell criticized the Army and Navy for failing to exploit air power, and his criticisms led to his court martial for his more-than-outspoken comments. Daso makes the interesting observation that 16 years later, when he joined the USAF General Staff, Mitchell's place had been usurped and General H.H. "Hap" Arnold now stood in his place as the "father" of the air service.

The interesting point of Daso's observation was that the USAF, apparently very deliberately, discarded a politically rough-hewn character from their own history (Mitchell) and replaced him with one more "politically correct" (Arnold). This speaks volumes, not only about how the modern Air Force perceives itself, but how they very consciously put history to work. A reader must therefore examine Daso's extremely sympathetic biography in that light. Daso is a serving Air Force officer, and Hap Arnold is now the "Father of the Air Force."

More to the point, Daso very obviously brings with him some strong beliefs, bordering on the religious, about the legitimacy of the use of air power. These are beliefs that color his writing through the implied and explicit support for all decisions taken by the Army Air Forces in World War II. Doctrine is never, ever, an issue in this book.

Despite this disclaimer, it should be noted that Daso has certainly done his homework in bringing this biography together. His is the first work to use not just Arnold's archival collection of personal papers, but the Arnold family private collection as well. Daso's research into Arnold's time as a cadet at West Point is also extensively documented and well presented.

Arnold, the Air Force's only five-star general, is certainly a figure in American military history worth studying. As one of the very first group of pilots in the United States Army, he learned to fly from the Wright Brothers themselves. He was "there at the beginning" and was very influential in establishing the course and tempo of the development of the Air Corps, later the Air Force. Most interesting, and central to the biography Daso presents, was the relationship that Arnold established and developed with the scientific and industrial communities. This is, perhaps, the most useful aspect of this biography.

When Arnold was an influential major in the very small pond of the pre-World War I Air Service (then a sub-set of the Signal Corps), he held a crucial position. His was the responsibility to get the United States geared up for war in the air. Arnold was one of a very few coordinating the procurement aspects of creating an aviation force from practically nothing. This experience, according to Daso, was crucial because it taught Arnold the importance not only of industrial preparation but the vital link between science and

industry as they relate to aircraft development. This colored Arnold's thoughts over the next 20 years as he climbed the ladder to the top.

The reason this is interesting is because of the light that it sheds on what President Eisenhower came to call the "military-industrial complex." It could very easily be argued that no such animal existed before Arnold, and since Arnold we have seen nothing else. One of Arnold's central beliefs was the need to tap into all possible avenues of intellectual development in the field of aeronautics, and his efforts led directly or indirectly to many R&D programs or institutions still in existence today.

If one is seeking a biography of how Arnold ran the Air Corps during World War II, this is not the right place to look. Daso devotes a scant 45 pages to the entire Second World War. Many of those pages, moreover, focus upon Arnold's deteriorating health in that period as he literally worked himself to death. This is not a book about command decisions of that war, or even very much about the interpersonal relationships Arnold had that influenced his decisions in wartime. Even more disappointing is the near total absence of any new or original insights into the massive rivalry that raged inside the Army during the inter-war period.

Daso seems to be deliberately avoiding any mention of the various struggles for power (and budget) that wracked the Army throughout the period covered in this biography. He is content, instead, to continually cite how Arnold had "learned a lesson" from what had happened to Mitchell. He makes little to no mention of the many inter- and intra-service fights that Arnold witnessed or participated in, even tangentially.

Therefore I cannot say that this is a well-rounded, or even complete, biography of the Air Force's highest ranking officer. It is interesting if you are a pure adherent to the idea of strategic air power first, and if anything is left over, support to the ground. It is not a book of critical analysis and honest evaluation of all aspects of Arnold the man, or Arnold the officer. Instead it is a book celebrating Arnold, technology and industry, and the bright, smiling and wonderful people that support the concept of "Air power."

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**Breakout — The Chosin Reservoir Campaign, Korea 1950** by Martin Russ, Penguin Books, New York, N.Y., 2000, ISBN 0-88064-231-9, 436 pages, \$14.95 (paperback).

Heritage, tradition, and lore are vital to the military psyche. We have all listened to fellow servicemen chronicle the achievements and proficiency of their former units. Often, these stories are inspiring to hear. Other times, they evoke a chuckle — anecdotes

about the pantheon of characters that seems to grace every American unit. And sometimes, they get old because we have heard it one too many times. In *Breakout*, author and former Marine Martin Russ succeeds at all of the above as he relates a gripping, in-the-foxhole account of the 1st Marine Division's plight in late November and early December 1950. Russ explains the determination, bravery, and *esprit de corps* of the U.S. Marines caught up in this campaign, and as an outsider, I found myself proud of the Marines for their tremendous sacrifices. Yet Russ belabors many points — particularly the shortcomings of the U.S. Army soldier — that detract from his work.

In October, 1950, the Marines landed at Wonsan, on North Korea's east coast, to conduct the supporting attack for Eighth (U.S.) Army, which was exploiting the capture of Pyongyang on the west side of the mountain ranges that divide Korea. The 1st Marine Division, commanded by MG O.P. Smith, and his regimental commanders, Colonels Litzenberg, Murray, and Chesty Puller, drove 78 miles into the enemy rear, northwest of Chosin, with the Army's 7th Infantry Division on their right flank. Then the Chinese launched a surprise counterattack. The Marines, rapidly cut off, had to fight their way out with bayonets and entrenching tools. This is a story of privates, sergeants, and lieutenants who fought with undaunted courage under the most harrowing conditions. They were short of supplies, fighting in rugged, mountainous terrain in brutal, sub-zero temperatures, and surrounded by the communists.

As a soldier's tale, this is a great work, but as a historical examination of the campaign, it comes up short. Russ relates many interviews and uses primary source material — both strengths of this book — but includes no endnotes for further reference. This becomes important when he repeatedly criticizes MG Edward Almond, commander of the U.S. X Corps. Russ asserts that MG Almond knew about the buildup of Chinese Communist forces and their counterattack against Eighth Army in the west, but "[n]either Almond nor any member of X Corps staff bothered to pass word of the disaster to the Marines" (85). Russ cites no references for this important point. What do the X Corps official records say? Did MG Almond address this topic in his diary? Was the intelligence passed to the Marines and not disseminated?

Russ slights the U.S. Army for its poor training and motivation, failure to develop an intelligence estimate, weak control over subordinate elements, loose awards policy, and lack of initiative of small unit leaders. The best summary of his attitude toward the Army is when he writes, "the Army couldn't seem to do anything right as far as the Marines were concerned." He also explains that the Marines were "contemptuous" of the Army.

I truly cannot recall any other book I have read wherein an author so thoroughly lam-

bastes a sister service — and the worst part is that it is to no end. Russ does not mention any of the Army's improvements after LTG Ridgway assumed command in Korea, or how far we have come since. At the same time, he glosses over 1st Marine Division's own command and control problems, attributing them instead to line of sight radio limitations. He praises the Marine close air support and responsive artillery, but fails to tell the reader that the 7th Infantry Division, on the eastern shore of the Reservoir, did not have the same capabilities — or at least not to the same degree. (In a curious example of poetic justice, it is a U.S. Army bridging company that saves the Marines at Funchilin Pass by laying a bridge across a high cliff.) The tone that pervades this book ultimately detracts from an otherwise great story. In the end, Russ sounds like just another Marine that hates the Army.

Another distraction is the lack of decent maps. Russ describes in detail the actions on Hills 1403 and 1282, right down to the fire team and even individual Marine level. From the text, the reader gets a picture of what the terrain might have looked like, but topographical maps would have greatly enhanced the ability to envision and learn from these savage fights. The few maps that Russ does include are rough schematics, which depict no terrain contour and would take about ten minutes to create on PowerPoint.

The book reads easily, with balanced sentence structure and good transitions (Russ is an English professor at Carnegie-Mellon University). It goes far to tell and re-tell this hallowed Marine Corps legend of one of their most determined and costly campaigns. His only section of photographs is a series of mug shots of the major players, from general to private. This enlivens the story for the reader.

I would recommend this book for anyone interested in small unit actions. It also brings to life stories we have read about the Korean War, but now puts names and faces to the saga. A great idea would be to slip this book into your cargo pocket or rucksack; the story will alleviate your woes when you read about guys who really had it rough.

For a scholarly work, Russ has some serious issues with the Army, but does not explore them to their full end and find the reasons why. The Army may have in fact performed as poorly as Russ asserts; but that does nothing for soldiers (or Marines) today to figure out how to remedy this and prepare for future fights.

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**Modern U. S. Military Vehicles** by Fred W. Crismon, BI Publishing Company, 729 Prospect Avenue, Osceola, WI 54020-0001, \$21.95.

The author, Fred W. Crismon, has followed up his excellent books, *U.S. Military*

*Wheeled Vehicles* and *U.S. Military Tracked Vehicles*, which covered the history of U.S. military ground force vehicles, with a shorter volume on modern military vehicles. Indeed, the new book, *Modern U.S. Military Vehicles* is basically an updating of the previous book. While near-encyclopedic in coverage of vehicles in the 1990s Army and Marine Corps, the author does not claim to cover every single type of vehicle that the U.S. has purchased. The book is a fine addition for persons who wonder about some type of vehicle they have seen in service, or who get asked, what was that vehicle I just saw?

Coverage of wheeled vehicles is far more extensive than that of tracked vehicles. Many of the photographs cover experimental vehicles, or vehicles procured in Europe that did not see world-wide Army service. Coverage of the Marine Corps LAV is good, as is the coverage of the HMMWV. The coverage of some of the HMMWV prototypes is fair, although some of the missing prototypes were more interesting. The coverage of the tactical support trucks and administrative vehicles is very good.

While I recommend this book for purchase by members of the Association and post libraries, the book does have some weaknesses. The coverage of the M-151 series of vehicles, commonly called jeeps, is somewhat misleading. The original M-151 had a "swing axle" rear suspension. When operating without cargo weighing down the rear, the vehicle had a tendency to roll over. After a series of intermediate fixes, the Army finally bought (in the M-151A2) a version with all new suspension that made the M-151A2 roll-resistant. Very few of the roll cages pictured in the book were procured.

The lone picture of the M8 Armored Gun System does not allow visualization of the total vehicle. While the production of the M8 was terminated to help pay for other programs, one can hope that the M8 will be put into production to help make the Army lighter. Coverage of the Field Artillery does not stress the ability given the M109A6 to operate independently. The purchase of this system heralded a new era in artillery support when even a battery's guns need not be massed to mass fire on the battlefield.

Books of this type help highlight how complex the Army is and the logistical headaches caused by the many specialist vehicles required to support a modern, mobile army.

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**Tuskers: An Armor Battalion in the Gulf War** by David S. Pierson, Darlington Productions, Darlington, Md.; 1997; 231 pages; \$27.95, hardcover.

To most Americans, August 2, 1990 means very little. To the soldiers of the 4th Battalion, 64th Armor, 24th Infantry Division (Mech), otherwise known as the Tuskers, it would be a day they would never forget. As Iraq spearheaded its drive into Kuwait, sol-

diers halfway around the world at Fort Stewart, Georgia, were going about their daily lives. However, within days, the Victory Division and the Tuskers were on full alert and preparing for deployment to the sands of the Middle East.

In *Tuskers*, David S. Pierson provides a welcome addition to the scarce literature on tactical armored ground combat in the Gulf War. As the battalion S2 for the Tuskers, he provides a unique view of what the battalion and its soldiers experienced, from Iraq's invasion of Kuwait to the Tuskers' preparations for war, ground combat, victory, and finally the welcome parades back home.

The strength of this work comes from the detailed look into what our fighting men experienced in the desert — the heat, the fear, the boredom, and all the other universal conditions inherent to war. Additionally, Pierson provides an excellent chronological description of the battalion's daily activities and important events throughout their eight-month stay in the Gulf.

Pierson further strengthens his account by not only describing what he and the battalion experienced as a whole, but what one of the line companies experienced during the ground phase of the war. This integration of battalion- and company-level perspectives gives a seamless look into the heart and soul of an armor battalion in Desert Storm. Despite the fact that some of his descriptions seemed sensationalized, they did not detract from the enjoyment of the material.

Another unique and powerful aspect of *Tuskers* is the author's addition of lessons learned following each chapter. In these observations, Pierson gives his opinion on what leaders and soldiers can learn from his and the battalion's experiences.

Numerous pictures, illustrations, and maps also add to the author's description of his experiences. Virtually, all of the pictures are personal photographs taken by the author, which give a feel for the people and places in his narration. Although some of the illustrations and maps are oversimplified, they nevertheless aid the reader's understanding.

*Tuskers* gives a candid insight into the world of mechanized combat — its speed, its ferocity, and its problems. Leaders and soldiers at all levels have something to gain by reading this book and learning not only about life in an armor battalion, but the common experiences of soldiers in desert ground warfare.

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**The Quotable Soldier**, edited by Lamar Underwood, Lyon's Press, New York, 2000, 288 pages, \$20.00.

There is no shortage of books offering military quotations. One can also surf numerous internet sites to obtain quotations, so why read Lamar Underwood's *The Quotable Soldier*? Quite simply, it's a great read and splendid collection of quotations. Underwood's

compendium offers more than the standard series of quotations usually listed blandly, alphabetically, by author, or chronologically.

Under the heading "Order of Battle," (used instead of a table of contents) editor Underwood arranges the words and thoughts of soldiers, generals, and politicians. His chapters follow a logical progression from, "The Call to Battle: Fighting Words..." to "The Fallen" and "Final Battles," reflecting the editor's stated aim of depicting the "phases of military life." Readers will find chapters devoted to Pearl Harbor, Vietnam, command, soldiering, and humor. Too often, we neglect the latter and the lighter side of our endeavors and the camaraderie inspired by soldiering; thankfully, Underwood does not. The chapter titled "At Ease" provides an excellent portrait of the humor and camara-

derie involved in soldiering. Chapters begin with well-crafted essays from the editor, which do a nice job of introducing each chapter and tying the book together.

Lamar Underwood is the editorial director of the Outdoor Magazine Group, author of *On Dangerous Ground*, and former editor-in-chief of *Sports Afield*. He is also an "Army brat." The quotations he chooses run the gamut from ancient times through Desert Storm, with sources ranging from Geoffrey Chaucer to Ronald Reagan, and include prayers for peace and declarations of war from some of the greatest and most infamous names in military history.

The book is a highly readable collection of witty, wise, and profound words that do a superb job of describing the profession of arms. Two examples:

"This durn fight ain't got any rear." Attributed to a wounded soldier at Shiloh in 1862, when ordered to the rear by his captain at Hornet's Nest.

"Men," a sergeant told his people aboard ship before our invasion of the island, "Saipan is covered with dense jungle, quicksand, steep hills, and cliffs hiding batteries of huge coastal guns, and strongholds of reinforced concrete. Insects bear lethal poisons. Crocodiles and snakes infest the streams. The waters around it are thick with sharks. The population will be hostile towards us." There was a long silence. Then a corporal said, "Sarge, why don't we just let the Japs keep it?" (That was from William Manchester's *Goodbye Darkness*)

ARMOR STAFF

## Software

**Europe In Flames** by Talonsoft, \$44.99 from the company website at [www.talonsoft.com](http://www.talonsoft.com), or local software retailers.

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

Reviewed on Compaq Pentium III 450 MHz processor with Windows 98 and 128 MB RAM.

*Europe in Flames* is a compilation of three other Talonsoft titles: *Eastfront 2*, *West Front Elite Edition*, and *West Front: Operation Sea Lion*. As such, it is a great value for the money, providing approximately \$150 worth of games (original publishing prices) for under \$50. The game covers tactical combat across the European Theater of War from 1939 to 1945. Game play includes individual scenarios of vastly differing complexity; shorter, linked-campaign games; and long-term, dynamic campaign games.

For the most part, individual icons represent platoons; each hex is 250 meters across and turns approximate six minutes of real time. Battles range in size from large company engagements to corps-level operations. Equipment for each major and minor power is available for all six years of the war. Over 250 individual scenarios are provided with the two disks, which are assigned a complexity rating from 1 to 10. This rating warns the player as to the number of units, length, and map size of the scenario. Approximately 20 linked campaigns are included, and 20 dynamic campaigns. The game ships with a scenario editor that allows you to design your own engagements. There is not a campaign editor.

Linked campaigns focus on a short, specific campaign, with a predetermined unit size and side, and as such, do not include unit improvement or new equipment fielding.

Dynamic campaigns are more open-ended affairs. You are represented on the battlefield by a personal leader that will improve over time. Should he get killed, the campaign is over. Your units will gain experience, thereby improving their performance, and periodically they will receive new equipment upgrades. You can choose to play either side in the conflict (to include most minor powers), and choose between infantry and armor organizations ranging from battalion to corps size. In both campaign systems you are restricted to that front; the Germans are permitted no switching to and from France, Italy, and Russia.

This is a turn-based game, with a logical and very flexible interface. Numerous realism factors can be toggled on/off to fit player preference, and the game supports play by email, LAN, modem, or hot seat. Four "boot camp" scenarios and one tutorial scenario are provided for each front (West and East). The player's guide is substantial and detailed. Talonsoft provides excellent support for their games, and it shows in the solid performance of the game. It runs well on slower systems and has never crashed on my system. The player has a wealth of options for displays and map views to select from (2D at two scales and 3D at three scales, plus a jump map). Optional rules include: armor facing effects, extreme fog of war, more detailed command and control rules, and off map artillery support.

This is a big, complex game, but the well-thought out interface, clear player's guide, and programmed learning scenarios make it easy to start playing rather quickly. Mastery of the more complex options can come later. The game includes air support, smoke rounds, both on and off map indirect fire support, obstacle emplacement and breaching capabilities, opportunity fire, fortifications, morale effects, and the ability to blow bridges. A tool bar and pop down menus, along with numerous options for displayed status bars and unit outlines (all color coded), facilitate rapid information manage-

ment. To fully realize the potential of all these tools, the player will have to carefully read approximately 70 pages of the player's guide. You can play and win without ever completely mastering all these tools.

The only weaknesses of the game are the unmanageability of some of the larger scenarios and an AI that is marginal in the attack. In scenarios above complexity level seven, and in campaign games where you command a brigade or larger, the game bogs down. Why you would want to command a corps down to the platoon level is beyond me, but the option exists if you are a true control freak. Group movement orders exist, but direct fire control is still tedious, and you cannot put friendly units on self-control.

The computer opponent is a skilled defender, and you can adjust the advantage level prior to fighting an engagement. This influences the amount of damage sustained by each side as a result of fire attacks. But in the end, the computer struggles to execute an effective combined arms attack, and attempts to overwhelm you with a flood of units that is (usually) easy to defeat. I guess that is why multi-player options are offered and important.

This game is incredibly fun to play when in command of a regimental force or smaller, and the range of player options is amazing. Scenarios are well designed and offer a huge range of challenges and units to command. This game has just about infinite replayability value, and will continue to be supported by Talonsoft and web sites dedicated to offering new scenarios. It also provides a realistic and "pretty" tool that could find its way into a professional development program to demonstrate successful company and battalion tactics. Overall, this is a great game and an outstanding value for the money.

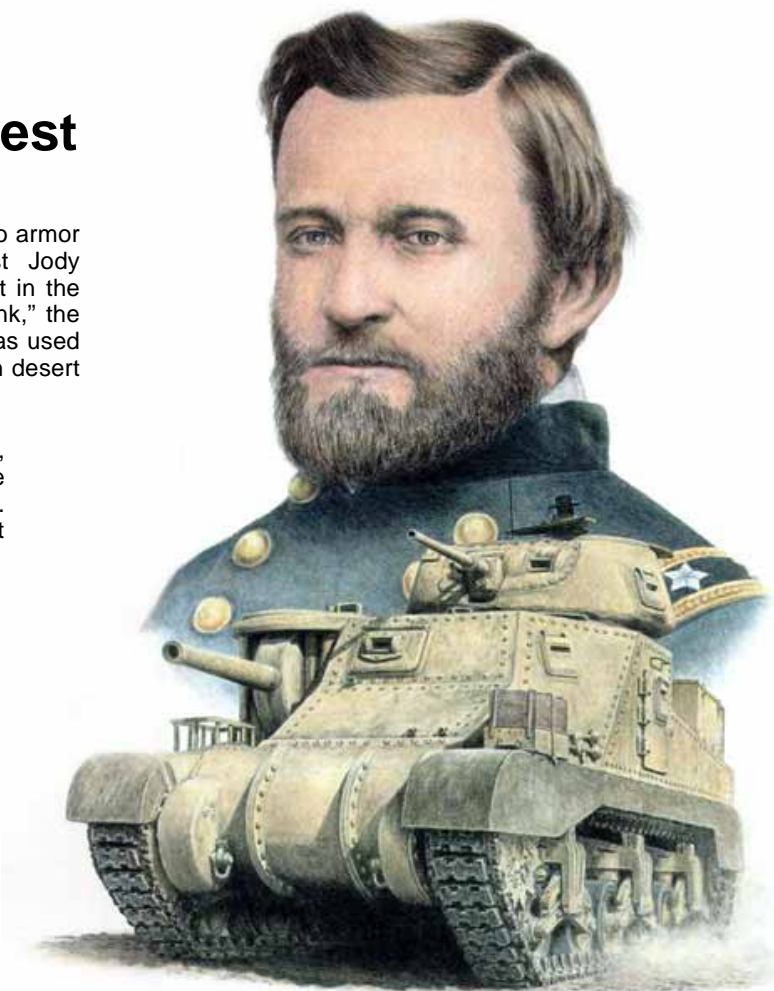
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## New Harmon Print Meets British Request

At the request of a British firm that caters to armor enthusiasts and modelers, *ARMOR* artist Jody Harmon has recently completed a new print in the "Namesake Series" depicting the "Grant Tank," the version of the U.S. M3 Medium Tank that was used by British forces, notably in the North African desert campaign.

The M3 was called the Lee in U.S. service, but the design was modified for sales to the British, who dubbed their version the Grant. Harmon's print shows the tank with a portrait of Grant.

When the Namesake Series was launched in a series of prints for the U.S. Armor Association, the Grant version of the M3 was left out because it was not used by U.S. forces. Accurate Armor, a firm in Scotland, wrote to Harmon to ask if a Grant print was coming. Told that it wasn't, the company commissioned the print, which will be sold by the firm ([www.accurate-armor.com](http://www.accurate-armor.com)). A limited number will also be available from the U.S. Armor Association.



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