

ARMOR

July-August 2005



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Once More Unto the Breach



This is my last journey through the breach. It has been a pleasure and honor to serve as the 40th editor in chief of *ARMOR*, and as with everything in life, it is time to move on to the next objective and pass the guidon.

ARMOR is the most widely respected professional journal because of its loyal supporters. Since 1888, this magazine has pushed the envelope through the excellent writings of its authors, as well as the work of a very competent and dedicated staff. Editors from other professional journals have asked me how we get such great articles. My answer is always the same: we allow our contributors to confront the tough issues. This earns us the capital that translates to more and more authors who are willing to stretch the paradigm and contribute to the betterment of the force.

In my first column as editor in chief, I wrote that change is here, and the armor force cannot afford to be left behind. The recent Base Realignment and Closure (BRAC) recommendation to move the Armor Center to Fort Benning, Georgia, and create a Maneuver Center of Excellence signifies an end to one era and the beginning of another. Who knows what the future will hold, but one thing is clear: the armor force won't sit back and wait for guidance. If the move becomes a reality and the Armor Center ultimately displaces to Fort Benning, I'm sure our infantry brethren will quickly adjust to our arrival.

Tailoring our forces to fight a tenacious enemy is crucial. In his article, "Light Cavalry Platoon — Armor Team Integration Procedures," Captain Jonathan Silk discusses the importance of our armor and cavalry teams in developing procedures for fighting both mounted and dismounted in an urban environment.

Convoy and mounted patrol operations continue to be the most dangerous and deadliest operations in Iraq. In his article, "Mounted Security Procedures in Iraq," Captain Jonathan Dunn shares his experiences on the importance of the planning process prior to conducting mounted security patrols and convoy operations, as well as developing well-prepared and rehearsed battle drills.

In a subject few in the military want to acknowledge, Captain K.C. Hughes explores the emotional and psychological stresses of combat on our soldiers in his article, "A Lesson Learned: Post Traumatic Stress Disorder."

"Air-Ground Integration," by Captain Shawn Hatch, examines some basic concepts in integrating aviation assets into the ground maneuver plan. Armor and infantry planners must have a working knowledge of aviation considerations so they can maximize the use of avi-

ation assets and get exactly what they need to successfully accomplish a given mission.

Lessons emerging from Operation Iraqi Freedom continue to reveal that during high-intensity combat, whether in an open desert or down a narrow street in Baghdad, the role of the main battle tank is far from over. In his article, "Employing Armor in Urban Combat," Retired Lieutenant Colonel David Eshel, Israel Defense Forces, showcases how the Israeli army adapted their tactics and equipment to effectively fight in an urban environment.

Our soldiers and units engage in daily support missions for the growing civil government and rebuilding of Iraq. For the typical combat unit in Iraq, civil-military operations have become just as crucial to mission accomplishment and execution as traditional combat operations. Captains Jason Goodfriend and David Levasseur examine this important endeavor in their article, "An Armored Task Force Approach to Civil-Military Operations."

"Holding Ground: Echelon Defense in Open Terrain" by Lieutenant Colonel Bo Friesen explores this tactical mission that most of our units have probably forgotten due to the necessity of other types of operations in Iraq.

We all know the importance of maintaining equipment and vehicles. In his article, "Fault Trend Analysis: A Proactive Maintenance Approach," Captain Walt Reed examines a unique way of conducting maintenance and requisitioning parts based on terrain and assigned missions.

In his article, "Peace in Galilee: Long-Forgotten Lessons," Eric Chevreuil uses a battle-analysis format to trace the long history of roadside bombs, improvised explosive devices, and counterinsurgency operations. He provides technological solutions to minimize the effectiveness of these cowardly killers.

Major Mike Sullivan explains the important role that observer controllers from the combat training centers played in rebuilding the Iraqi Army. "From the Ashes: Rebuilding the Iraqi Army," highlights the importance of rebuilding a competent and ready army for restoring order in Iraq.

That's it for now. *ARMOR* Magazine and the U.S. Armor Association will continue to be excellent and vital links to armor and cavalry forces — just as they have been since 1888. Thanks for your continued support!

— DRM

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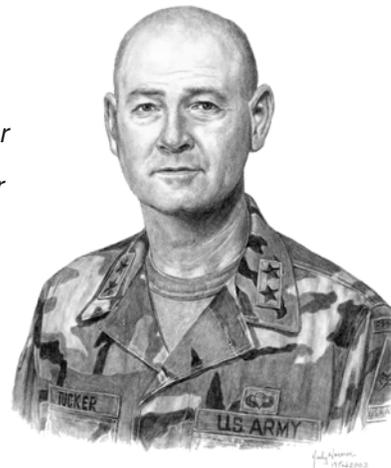
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The Armor Officer Education System Expands to Include “Reconnaissance-Centric Training”

I would like to take this opportunity to update the Armor community on some of the exciting changes to the Officer Education System (OES) here at Fort Knox. As the primary unit responsible for officer training, the 16th Cavalry Regiment has been the catalyst for most of these changes.

I'll start with the Armor Officer Basic Course (AOBC), which will retain its primary mission to prepare Army and Marine Corps Armor lieutenants in the basic fundamentals of leading a platoon in the full spectrum of operations. In keeping pace with Army modularity, we have developed a new program of instruction that is current and relevant. We have expanded the curriculum from just “tank centric” training to include more “reconnaissance centric” training to provide the skills necessary for Armor lieutenants to lead a tank and/or a reconnaissance platoon in combat. We have made a number of significant changes to support this shift. For instance, gunnery no longer consists of just firing tanks; lieutenants now fire the MK19 40mm machine gun, the M249 squad automatic weapon, and the .50-caliber machine gun from a high mobility, multipurpose wheeled vehicle (HMMWV). We also merged the four-day HMMWV field training exercise with the three-day urban operations field training exercise and created a seven-day sta-

bility and support operations field training exercise to teach future armor and cavalry platoon leaders stability and support operations and counterinsurgency tasks from the individual level up to the collective platoon level. These tasks include individual reflexive fire, four-man stack drills, building clearing, mounted and dismounted patrolling, checkpoint operations, conduct of raids, and many other tasks that are key to mission success in the contemporary operating environment.

The “ten-day war” that many of you conducted in the past is even more challenging and exciting. We now begin the exercise at the individual crew level then continually ramp up the level of difficulty as we transition to section- and platoon-level training. The culminating event is company/team level force-on-force night operations with participation of captains from the Armor Captains Career Course (AC3). We are developing Armor platoon leaders who are trained in their branch-specific tasks and are prepared for the fight they are about to face.

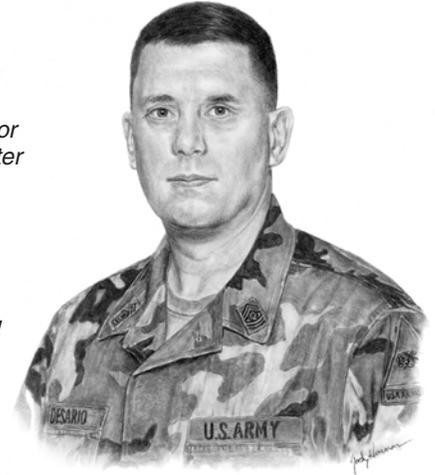
The AC3 has also undergone significant revisions, which resulted from a combination of a directed redesign of all captains career courses, cancellation of the Combined Arms and Services Staff School (CAS3), feedback from the Force, and discussions with leaders and commanders from Operations Enduring and Iraqi

Freedom. The loss of CAS3 allowed us to add ten days to AC3, so we thoroughly reviewed the program of instruction to ensure we stay current and relevant. We dropped task force defensive operations and a block on tactical operations center (TOC) operations and added dedicated training blocks on brigade operations; urban operations; stability operations; intelligence, surveillance, and reconnaissance (ISR) operations; and security operations.

We retained task force offensive operations and company/team offensive and defensive operations. Since the majority of students have had exposure to Force XXI battle command, brigade and below (FBCB2) systems as lieutenants, we replaced FBCB2 instruction with maneuver control system-light (MCS-L) instruction. We eliminated tactical operations (TAC-OPS) simulations and now use the Army standard joint conflict and tactical simulation (JCATS), which enables command and control with FBCB2 and MCS-L during all command post exercises and provides the most rigorous training available. We synchronized the AC3 graduation dates with the calendars of lifecycle managed units and the modular brigade combat team transformations to better support the Army Force Generation Model. As a result, AC3 now graduates eight times annually, versus four times in the past.

Continued on Page 48

CSM George DeSario Jr.
Command Sergeant Major
U.S. Army Armor Center



Keeping the Abrams NBC System Operational to Optimize Crew Safety

The Abrams tank is a complex weapons system, and like any complex system, it consists of several internal systems, working in harmony to produce an effect or outcome. The nuclear, biological, and chemical (NBC) system is just one of the subsystems of the Abrams tank designed to protect crewmembers when they are exposed to a harmful NBC environment. The potential NBC environment is filtered through the Abrams' NBC protection system to provide crewmen breathable air. Under ideal conditions, harmful substances are removed before reaching the crew area; however, what happens if the tank is not properly maintained?

There are various NBC systems within the military's inventory, some designed for chemical suite, platform system, or shelter. The Abrams' NBC system feeds off the turbine engine from the bleed air inlet through an air-cycle machine (air cooling), condenser, and other systems, to the NBC air-filtering system. If the air-cycle machine is defective or degraded with mud or other contaminants, NBC filters may be exposed to extremely hot engine air. The NBC filters contain carbon material similar to the charcoal used in your grill. If the air-cycle machine fails, hot turbine air reaches the carbon materials, resulting in a vehicle fire. The Abrams' NBC filter, when properly maintained, works in harmony with the bleed air inlet from the turbine, as long as the entire system is maintained to standard. If the NBC system is not maintained to standard, incidents, such as fire, may occur.

To adequately ensure the NBC system is maintained to standard, a combination of training and system awareness is needed to prevent or lessen the effects of environmental contaminants. There are many actions underway to create a more robust NBC system and increase its safety.

Make sure crewmembers implement sufficient levels and frequencies of maintenance

to ensure the system's optimal performance. Below is a guideline that will assist units in inspecting and maintaining NBC systems to standard:

NBC Filter Fires — Material and Training Fixes:

- Before preventive maintenance checks and services (PMCS), check audible warning alarm (M1A2s).
- Conduct new -20 annual and semi-annual maintenance tasks
- Increase 63A mechanic NBC systems training at one-station unit training.
- Install automatic shutoff software for M1A2 and M1A2SEP (systems enhancement program).
- Use more robust air-cycle machine air bearings (replaced through attrition).
- Replace M48 filters with M48A1 filters.
- Review NBC systems training video.
- Conduct single fire evacuation drill, part of tank crew gunnery skills test (TCGST).

M1A1 Modification Work Order (MWO):

- Install automatic NBC shutoff software.
- Check audible warning alarm.
- Install NBC filter fire fix MWO hardware improvements.
- Install stainless steel mounting bolts.
- Install driver night vision device quick disconnect.

NBC Filter Fires – Prevention by User:

- Conduct crew, mechanic, and leader training.
- Conduct daily PMCS, to include training manual checks; running the system a total of ten minutes (after first five minutes do checks); and report faults.

- Conduct complete checks and services.
- Prevent water from entering and standing in NBC sponson.
- Do not turn off circuit breaker 26 in hull network box, which allows free flow of engine bleed air through NBC system.
- Do not turn off circuit breaker 3 in turret network box (system can still be turned on).
- If NBC sponson "In," "Out," or "Over-temp" warning occurs, shut down the NBC system and report the fault.
- If excessive hot air or smoke is observed coming from the NBC system, or the driver has difficulty breathing, shut down the NBC system and the engine, and evacuate the tank.

The U.S. Army Armor Center places crew protection and soldier safety at a number one priority level. Leaders are responsible for stressing the value of inspecting and maintaining vehicles and ensuring all subsystems are properly maintained. Ensuring the vehicle and its subsystems are maintained to ideal standards prevents injury and death associated with vehicle mishaps.

Special thanks to Mr. Gregory Skaff and Mr. William Watson for their contributions to the safety of armor soldiers. Mr. Skaff is the Deputy TRADOC Systems Manager for Abrams Tank Systems, U.S. Army Armor Center, Fort Knox, Kentucky. Mr. Watson is a senior safety engineer assigned to the U.S. Army Armor Center Training, Doctrine, and Combat Development Directorate, Fort Knox.

Iron Discipline and Standards!

From the Boresight Line:

Master Gunner — The Way Ahead

by First Sergeant Robert Hay

“To improve is to change; to be perfect is to change often.”

— Winston Churchill

As the new Master Gunner Branch Chief and M Troop, 2d Squadron, 16th Cavalry Regiment Commandant, I would like to bid a fond farewell to First Sergeant Jack Cooper as he unstraps his tanker boots for the last time. 1SG Cooper has led the branch for the past two years and has done an outstanding job of strengthening the master gunner corps. I am sure he will not stray far from the tank line as he moves off into retirement. In light of his departure, rest assured that your master gunner program remains in good hands. I have 10 years experience as a master gunner and have performed the duties at both the company and battalion levels. I am looking forward to serving in the job and look forward to working with master gunners in the field.

The master gunner mission has changed very little over the past 30 years — train selected noncommissioned officers in advanced gunnery methodology, turret weapons maintenance, and training management. In a nutshell: we produce tank gunnery and turret maintenance subject-matter experts. We will continue to produce high-quality master gunners required for today’s armor force.

As our Army moves into modular units through transformation and continues to fight the Global War on Terror, we must adapt and change to remain relevant. Today’s master gunner is asked to do more, and as a result, we have added additional training to the Master Gunner Course to facilitate those expanded duties. Based on recommendations from the field and lessons learned from Operations Iraqi and Enduring Freedom, we have incorporated additional course requirements into our programs of instruction:

- *MK19 40mm machine gun.* Soldiers learn basic functions, which include disassembly, assembly, functions check, and troubleshooting.

- *Ammunition/firing tables.* Additional training for the M1028 (canister round), MK19, and 25mm characteristics to the ammunition and firing tables training.

- *Surface danger area diagram (SDAD).* Expanded training on SDAD, including training on composite surface danger zones. This is a direct result from master



gunners in Iraq having to build ranges that encompass multiple weapons platforms.

- DA Form 2408-4 (*Weapons Record Data Card*). Master gunner candidates are now being trained on the electronic version of the 2408-4.

These new training requirements will not only assist the master gunner in executing his current mission, but will prepare him for future requirements as our current brigades restructure into units of action. We have also added a master gunner’s toolbox to our Army Knowledge Online (AKO) site for master gunners in the field to access information ranging from training tools, such as SDAD “how-to” information, to recommended tools of the trade.

We are currently assessing the need to restructure and update the Master Gunner Course, which may include reducing the course’s length to better align with unit lifecycle management. The current course length is 11 weeks; if we can reduce that time without compromising the quality of master gunner we produce, it is in the best interest of the Army and the armor force to do so. Possible course-reduction measures include:

- Pre-class homework — lessons students need to complete prior to attending class. Students will report to class with a better understanding of the subject material, reducing actual class time.

- Reducing total number of exams from seven to six.

- Reducing total time spent on various classes — evaluations with instructors reveal some classroom training time can be reduced without sacrificing quality of instruction.

We are also looking at the possibility of tracking the Master Gunner Course. Instead of students attending the M1A1

course and then the A2 transition course, students would attend common-subject classes and then track into respective M1 model classes. There are some underlying issues that must be resolved before a decision can be made. Any changes to the course would have to undergo extensive validation and testing prior to implementation.

We are also beginning the preliminary steps on developing a mobile gun system (MGS) master gunner course. At this time, we do not now if this will be a full stand-alone course or a transition course. Once program development is underway, we will keep the force informed on the MGS course.

Our current Armywide staff sergeant master gunner strength is approximately 67 percent, which is an increase of about 20 percent from four months ago, but still not at a comfortable level. We encourage commanders to identify and send deserving Soldiers to the course. The long-term benefits of a strong and healthy master gunner force will pay ten-fold in increased lethality and combat readiness. With the removal of gunnery training from the Basic Noncommissioned Officers and Advanced Noncommissioned Officers Courses, and the transition of tank turret and hull mechanics to system mechanics, the knowledge and training a master gunner receives becomes increasingly more important to the commander and unit.

In closing, I want to assure the force that we will maintain the integrity and prestige of the master gunner program. For 30 years, we have been providing commanders and units with expert advice and developing our gunnery doctrine to its current level of excellence, which will not be compromised on my watch! However, change is upon us, and we must embrace change to remain relevant.

Light Cavalry Platoon — Armor Team Integration Procedures

by First Lieutenant Jonathan Silk

During Operation Iron Saber, 4th Platoon, Killer Troop, 3d Squadron, 2d Armored Cavalry Regiment, was attached to 2d Battalion, 37th (2-37) Armor, during combat operations in Al Kufa, An Najaf, and Diwaniyah from April to July 2004. Team Battle was an armor/cavalry company team, comprised of 3d Platoon, B Company, 2-37 Armor, and Headquarters Company, 2-37 Armor, and three scout platoons from Killer Troop, 3d Squadron, 2d (3/2) Armored Cavalry Regiment.

On today's battlefield, platoon leaders assigned to light cavalry and armor units must be prepared to fight mounted and dismounted in the urban environment. During Operation Iron Saber, procedures were developed and used by my scout platoon, Killer 4, Killer Troop, 3/2 Armored Cavalry Regiment, during the execution of numerous reconnaissance missions and engagements with enemy forces in Iraq. These procedures, which are relevant to armor/cavalry company teams and armor companies operating in gun trucks, include task organization in the urban fight; seizing key terrain; using the M203 effectively in urban

terrain; coordinating with armor in the urban fight; marking enemy positions for tanks; and dismounted observation posts.

Organizing the Cavalry Scout Platoon for the Urban Fight

Good task organization is important because it gives the platoon flexibility to handle any situation. Our experiences revealed that maneuvering mounted with no dismounted capability against an enemy in an urban environment was ineffective. Using all of the platoon's assigned gun trucks without a dismount element does not provide the platoon leader the flexibility needed to conduct operations in an urban environment.

Based on combat experience, a mounted patrol, consisting of four gun trucks, can effectively conduct urban reconnaissance operations. If the platoon has more gun trucks available, take the extra crews and form a dismount element that will ride in the four gun trucks. The security posture increased to 360-degrees per gun truck by having the dismount teams riding in the gun trucks.



Soldiers can use any spare crew served weapons and radios from the gun trucks for dismounted operations. The platoon's dismounted element consisted of two teams; a sergeant led one team made up of three soldiers and the platoon senior scout led the other team made up of four soldiers. The dismounted teams seized dominant terrain, cleared buildings, occupied observation posts, and operated as dismounted M240B teams.

The dismounted teams carried two man-pack radios (one each) and, depending how the platoon leader deployed the teams, they carried two M240Bs with M145 mounted scopes. The M240Bs, which were not being used, were crew served weapons cross-loaded from the gun trucks. The platoon leader should include M203 gunners in the plan for dismounted weapons organization. The M203 gunners, deployed on dominant terrain seized by the dismounted teams, provided the platoon leader immediate capability to engage and destroy enemy forces massing and seeking cover in alleys and side streets around the platoon's position.

For command and control purposes, the platoon's senior scout controlled the dismounted element and rode in the platoon leader's gun truck. When the dismounted team needed to be deployed, the platoon leader quickly tasked the senior scout using Force XXI battle command brigade and below (FBCB2).

All leaders in the platoon had radio capability. If leaders do not have radio capability, they will miss important information passed over the net. When the platoon leader dismounted, a soldier with a manpack maneuvered with him, leaving the platoon sergeant in control of the mounted element.

Seize a Dominant Position and Control the Terrain

Once the platoon makes contact with the enemy, it is necessary to maintain that contact to engage and destroy the enemy. In an urban fight, this can be difficult when the enemy uses urban obstacles to fight on his own terms and then breaks contact to displace and attack again.

Instead of constantly maneuvering to maintain contact, the platoon should seize the dominant terrain in the area. The dismounted teams, who are clearing buildings, find a building to use as a dominant position to find and fix the enemy while the gun trucks cover all avenues of approach to the platoon's position. From the dominant position, the platoon leader can observe the urban terrain and direct the platoon fight. The platoon leader can coordinate platoon fires from the gun trucks, coordinate with and direct armor to engage and destroy enemy positions, and deploy the dismounted crew served weapons to suppress enemy positions on rooftops, denying the dominant terrain to the enemy.



"The grenadiers can fire marking rounds at the entrance to side streets or alleyways, which can be adjusted by gun trucks on the ground or from a dismounted team observing the same area. Once the marking round is on line with the alleyway, the grenadier then fires into the alleyway. The incoming 40mm rounds will detonate in the alleyway or on the sides of the alleyway, killing or wounding enemy forces and denying that terrain as a covered position."

Using the M203 Effectively in Urban Terrain

On today's urban battlefield, rules of engagement (ROE) issues can either delay or prevent indirect fire support. The M203's capability to engage and destroy enemy forces using urban terrain as cover and concealment makes it an effective alternative when indirect fire is unavailable. The M203's 40mm round minimizes collateral damage, which is important in the urban fight when enemy forces are in close proximity to innocent civilians. We quickly learned that the enemy would mass in alleyways and side streets a few hundred meters from the platoon's position and maneuver to a firing position on the ground to engage, or engage from an elevated dominant position. The side streets and alleyways are urban dead space. To deny the enemy this terrain, we used the M203 to engage him in alleyways and side streets.

Once the platoon established a dominant position, the grenadiers fired weapons to engage enemy forces who were massing in dead space where the platoon's direct fire weapons could not engage. The grenadiers can fire marking rounds at the entrance

Cavalry Scout Platoon Organization

Killer 4-1	Killer 4-2	Killer 4-4	Killer 4-5
Gunner PL Driver Dismount-Senior Scout Dismount	Gunner TC Driver Dismount Dismount OP Kit Bag M240B W/M145 Scope	Gunner PSG Driver Medic Dismount	Gunner TC Driver Dismount Dismount OP Kit Bag M240B W/M145 Scope

Figure 1



"From the dominant position, the platoon leader can coordinate with the team commander and call armor forward to engage and destroy enemy positions. The platoon leader directs the tanks to maneuver parallel to, or down to, the alleyway or side street and engage the enemy in the alleyway with the tank's coaxial machine gun. The platoon gun trucks will engage and destroy enemy forces maneuvering to escape the tank's coaxial machine gun fire as they exit the other side."

to side streets or alleyways, which can be adjusted by gun trucks on the ground or from a dismounted team observing the same area. Once the marking round is on line with the alleyway, the grenadier then fires into the alleyway. The incoming 40mm rounds will detonate in the alleyway or on the sides of the alleyway, killing or wounding enemy forces and denying that terrain as a covered position. The enemy had the choice to either stay in the alley and absorb the 40mm indirect fire or maneuver to another position. When the enemy attempted to maneuver out of the alleyway or side street to escape the 40mm fire, the gun trucks covering those areas engaged and destroyed them.

Coordinating with Armor in the Urban Fight

From the dominant position, the platoon leader can coordinate with the team commander and call armor forward to engage and destroy enemy positions. The platoon leader directs the tanks to maneuver parallel to, or down to, the alleyway or side street and engage the enemy in the alleyway with the tank's coaxial machine gun. The platoon gun trucks will engage and destroy enemy forces maneuvering to escape the tank's coaxial machine gun fire as they exit the other side. The tanks should not maneuver where the scout platoon cannot support them. Once the tanks have destroyed enemy positions or forced the enemy to withdraw, the scout platoon can maneuver forward and occupy a new position to maintain contact or regain contact, if needed.

Marking Enemy Positions for Tanks

Identifying enemy positions in an urban environment is difficult. Further, marking them so a tank can identify them is equally difficult. Our platoon used several techniques to mark enemy positions at night or during limited visibility. In operations during hours of darkness, enemy positions were marked using the

9mm laser mounted on the handgrip of the 9mm pistol. This is a good technique; however, if the soldier lasing the target gets tired, the laser could bounce around, making it difficult for the tank gunner and tank commander to identify the target.

The PEQ-2 laser is an excellent tool to mark targets, both with the aiming laser or on spotlight mode. The PEQ-2 mounts on a crew served weapon attached to the mount on the gun truck. This is a more stable platform from which to laze enemy positions. When multiple engagements were occurring simultaneously and a PEQ-2 was unavailable to mark an enemy's position, leaders would use a steady stream of tracers from their M4s until the tank gunner identified the enemy's location. Leaders should also be prepared to mount the tank and direct the tank commander to the enemy's position.

During daylight operations, we used a steady stream of tracers to identify enemy positions, which proved to be an effective technique. As a planning consideration, all soldiers should either carry a magazine of tracers or have a tracer/ball mix loaded in every magazine to mark enemy positions.

Use of Dismounted Observation Posts

Based on combat experience, employing dismounted observation posts (OPs) is an effective technique to counter enemy forward-observer positions. Each dismounted team had an OP kit bag loaded on the gun trucks, which consisted of a manpack radio, binoculars, and a global positioning system (GPS). The dismounted team occupying the OP had an M203 and an M240B with a mounted M145 scope.

Mahdi militia forward observers adjusted 81mm and 120mm mortar fire on our positions using cell phones to communicate with the mortar positions. Enemy forward observers seemed to

know the rules of engagement and did not carry weapons, making it difficult to determine hostile intent. Dismounted OPs observed enemy forward observers, usually positioned on rooftops or in doorways of buildings, making corrections to adjust fire over cell phones. They stood out from the rest of the environment because as mortar rounds impacted, they were in the open and not behind cover. The platoon engaged and destroyed enemy forward observer positions with M203 and M240B fire from the OP, crew served weapons fire from the platoon's gun trucks, or tank cannon fire coordinated by the platoon leader.

Dismounted OPs proved to be very effective when the terrain did not provide suitable observation and cover firing positions from which to engage. Sometimes the only cover available was piles of rubble or walls, which are not good vantage points from which to observe and engage the enemy. In this situation, dismounted OPs placed in front of covered positions can detect enemy forces. Once enemy forces are detected, the information is reported to the gun truck commander and gunner, then the gun truck moves from behind cover to engage. After the engagement, the gun truck returns to its covered position.

Coordinate Between Platoons for Use of Illumination

While conducting operations in Kufa during hours of darkness, on a number of occasions, there were multiple engagements occurring simultaneously, involving more than one scout or tank platoon. Engagements during hours of darkness can require illumination, such as a star cluster or parachute flare, to il-

luminare enemy positions. Illumination should be coordinated over the command net to allow friendly gun trucks, who may be using darkness as concealment, to take up covered positions before flares illuminate and expose them. Failure to coordinate over the command net can leave friendly forces exposed to enemy fire when the flare pops.

Recommendations for the Armor Community

Armor companies need more M203s than currently authorized. The U.S. Army Armor Center and the U.S. Army Training and Doctrine Command should adjust the modification table of organization and equipment (MTOE) to provide an M203 per tank crew. The M203 is a very effective weapon for engaging and destroying enemy forces in the urban environment. Combat experience demonstrated that tank commanders and loaders could effectively engage and destroy enemy forces from the hatch with effective M4/M16 fire. Tank crews equipped with M203s allow the crew to put 40mm fire where they need it, when they need it, creating a more lethal tank crew. It provides crews greater protection by allowing them to protect their flanks in close-quarter engagements from enemy ground forces maneuvering against tanks attempting rocket-propelled grenade or small arms engagements. If tank companies are operating in gun trucks instead of tanks, then they are essentially scout platoons and can use these procedures.

Armor and cavalry platoons also need more manpack radios than currently authorized. The current battlefield demands that

"Based on combat experience, a mounted patrol, consisting of four gun trucks, can effectively conduct urban reconnaissance operations. If the platoon has more gun trucks available, take the extra crews and form a dismount element that will ride in the four gun trucks. The security posture increased to 360-degrees per gun truck by having the dismount teams riding in the gun trucks."



Battle Drills for STX 17-97F-10-3 Conduct Zone Reconnaissance (Cavalry Scout Platoon)

TABLE 4-12 from ARTEP 17-97F-10-MTP

<u>TASK/DRILL</u>	<u>T&EOs and TASK #</u>
Conduct tactical movement	17-3-1016.17-RECP
Conduct passage of lines as passing unit	17-3-1014.17-RECP
Conduct an area/zone reconnaissance	17-3-4010.17-RECP
Execute actions on contact	17-3-1021.17-RECP
React to indirect fire drill	17-3-DRL3.17-RECP
Attack an inferior force	17-3-0225.17-RECP
Reconnoiter an obstacle/restriction	17-3-4012.17-RECP
Bypass threat contact	17-3-2420.17-RECP
React to air attack drill	17-3-DRL5.17-RECP
Conduct reconnaissance handover	17-3-4025.17-RECP
Perform consolidation and reorganization	12-3-C019.17-RECP
Rearm/resupply	17-3-1030.17-RECP

Figure 2

armor and cavalry leaders fight dismounted. When leaders dismount, it is essential for them to have the capability to monitor the command net to report and receive information.

Armor and cavalry platoons need in-depth training on assigned weapons systems. To build depth, the fundamental requirements are basic skill and sustainment training on the M16/M4, M203, M240B/G, and the M2 .50-caliber machine gun. Maximizing the use of training ammunition and simulators will also build depth in platoons. Having several soldiers capable of effectively operating many different weapons systems was crucial to the platoon's success in combat. A platoon trained in-depth allows for greater performance on long-duration operations and for a good crew rest plan.

During deployment, leaders should establish sustainment and cross-training plans on platoon organic weapons. Training can be conducted at the forward operation base and qualification can be performed when the platoon rotates to a range in theater — it is critical that all soldiers be trained on all weapons systems. Leaders should anticipate taking casualties. When a casualty occurs on a weapons system, if the platoon has been cross-trained on all organic weapon systems, a trained soldier can immediately replace the casualty.

Implementing Effective Procedures During STX Training

Readers can implement these procedures during situational training exercises (STX) by referring to Army Training and Evaluation Program (ARTEP) 17-97F-10-MTP, *Mission Training Plan for the Reconnaissance Platoon*, Chapter 4, "Reconnaissance Platoon, STX 17-97F-10-3, Conduct Zone Reconnaissance (Cavalry Scout Platoon)."¹ Figure 2 is a copy of table 4-12 from STX 17-97F-10-3, which lists the tasks trained during the STX.² Once the platoon is proficient at conducting zone reconnaissance, it will be ready for progressively more difficult conditions. Figure 3 is an example of adding or substituting tasks to create a scenario to execute zone reconnaissance in an urban environment.³ The STX is an excellent opportunity to train in-depth on weapons systems and implement these procedures in an urban reconnaissance scenario.

Leaders preparing for deployment should plan to cross train all soldiers on platoon-organic weapons systems. Maximizing use of training ammunition and simulators will build depth in platoons. M203 grenadiers can train in military operations in urban terrain (MOUT) sites using training rounds to practice engaging alleyways and side streets from rooftops. If a MOUT site is unavailable, then platoon leaders can plan a nonstandard range to achieve the same training level. Platoons can train on marking targets for both day and night engagements during platoon ranges. One vehicle per section can spot the target and mark it using one of the above-described methods while the other vehicle engages the target.

Learn and Fight from Experience

The procedures described in this article will assist the light cavalry/armor platoon leader in conducting combat operations in urban terrain. The development process occurred during platoon after-action reviews (AARs) and during the planning process while the platoon leadership wargamed courses of action. From the AARs and wargaming sessions, the platoon leadership assessed what worked and what did not work and used proven procedures during combat operations.



Notes

¹Army Training and Evaluation Program (ARTEP) 17-97F-10-MTP, *Mission Training Plan for the Reconnaissance Platoon*, Chapter 4, "Reconnaissance Platoon, STX 17-97F-10-3, Conduct Zone Reconnaissance (Cavalry Scout Platoon)," 23 April 2004, p. 4-41.

²STX 17-97F-10-3, p. 4-41.

³ARTEP 17-97F-10-MTP, Chapter 5.

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Recommended Tasks for Substitution in STX 17-97F-10-3 from ARTEP 17-97F-10-MTP

<u>TASK/DRILL</u>	<u>TASK #</u>
Conduct target acquisition	17-3-4017.17-RECP
Conduct reconnaissance by fire	17-3-0218.17-RECP
Conduct urban area reconnaissance	17-3-4015.17-RECP
Establish an observation post	17-3-1039.17-RECP
Search a building	17-3-1110.17-RECP
Conduct tactical movement (dismounted)	07-3-1134.17-RECP
Conduct overwatch	17-3-3061.17-RECP
Conduct support by fire	17-3-3062.17-RECP

Figure 3

Mounted Security Procedures in Iraq

by Captain Jonathan Dunn

On today's nonlinear, noncontiguous battlefield, all units are susceptible to enemy contact. All units, to include light cavalry troops, armor companies, forward support battalions, and regimental support squadron elements, need to secure convoy and logistics missions. It is imperative that units are aware of the threats they face and have well rehearsed battle drills in place as part of standard operating procedures (SOP).

This article addresses the planning process for mounted security patrols and shares effective procedures that Killer Troop, 3d Squadron, 2d Armored Cavalry Regiment (3/2 ACR) used in the execution of over 1,000 mounted security missions from October 2003 through April 2004, while they were attached to 2d Brigade Combat Team, 1st Armored Division, in Baghdad, Iraq.

Mounted Security Patrol Organization

Based on combat experience in Iraq, a mounted security patrol consisting of four gun trucks can effectively provide mounted security for up to twelve vehicles. If the unit has more gun trucks available, use those crews to form a dismounted element that will ride in the four gun trucks.

The dismounted teams can control traffic or maneuver on the enemy, while any crew served weapons not being used by the gun trucks can be used for dismounted operations.

Planning

It is very possible that units tasked to provide mounted security will conduct day-to-day mounted security missions. It is essential that platoon leaders do not take shortcuts and use established troop leading procedures (TLP) when planning missions. While going through the TLP, the platoon leader should coordinate with the S2 section several times during the mission planning process. The S2 section should produce a graphic that lists all significant activity in the area in which the convoy will be operating. The platoon leader will check enemy activity against his planned route and make any necessary adjustments based on his assessment of the balance between accidental and tactical risks. The S2 should also be updating the platoon leader during the mission with any updates on enemy activity in the area in which the patrol is operating. Battle drills that should be incorporated into the platoon's SOP include reacting to an improvised explosive device (IED) that has

not detonated, reacting to an IED that has detonated, and reacting to ambush.

Medical Evacuation (MEDEVAC)

Mounted security patrols should be prepared for casualty evacuation. The platoon leader should ensure that nearly all soldiers in the platoon are combat lifesaver qualified. All gun trucks in the mounted security patrol should have combat lifesaver bags carried in accordance with the unit's load plan SOP. MEDEVAC cards should be in every gun truck, preferably taped to the radio or the radio mount, so that soldiers calling in the nine-line MEDEVAC can read directly from the MEDEVAC card. The platoon medic's job is to treat the casualties, not call in the nine-line MEDEVAC. Primary and alternates should be designated for this purpose to save precious, potentially life-saving minutes; otherwise, everyone may assume someone else is calling in the report.

When selecting an evacuation location, the highway or road where enemy contact occurs often presents a great landing zone (LZ) for the MEDEVAC helicopter. However, the platoon leader should keep in mind that a helicopter is a high-payoff target. If the enemy situation and condi-





tion of the casualties permit, the platoon leader may move the patrol, or part of the patrol, out of the enemy contact area to an alternate LZ.

Air-Ground Integration

During mounted security missions, the patrol could task scout weapons teams to provide air coverage, either for the entire mission or for specific phases. If the patrol gains contact, a scout weapons team can respond and be on station within minutes. The patrol leader and section leaders should be prepared to conduct air-ground integration (AGI) at all times during the execution of the mission. It is imperative that leaders have immediate access to a copy of the AGI checklist. An AGI checklist should be part of the unit SOP and should resemble the hasty (radio) air-to-ground checklist below:

Air check-in (what the scout weapons team reports):

- ✓ Number of aircraft and call signs.
- ✓ Time on station.

- ✓ Weapons configurations and loads.
- ✓ Direction of approach.

During preparation for the mounted security mission, face-to-face coordination with the air-mission commander is the preferred method to conduct AGI planning. The scout weapons team will most likely not be present during planning, so the platoon leader should select named areas of interest (NAI) along the route and have the grids accessible. In the event air support becomes available during the mission, the platoon leader is prepared to conduct hasty AGI, and can simply give the scout weapons team the NAI grid during tasking.

If the patrol has Force XXI battle command, brigade and below (FBCB2) capability, it is an excellent resource for conducting hasty AGI. The FBCB2 allows the platoon leader to coordinate and task the scout weapons team quickly and efficiently, thus preserving valuable station time. The platoon leader can simply pull the grids to NAI and enemy locations

“Mounted security formations provide security, command and control, and projection of combat power. There are two basic mounted security formations; deciding which one to use depends on the terrain through which the convoy will be moving, the experience and competence of the unit, and the number of escorted vehicles. As with all procedures, there are advantages and disadvantages to each formation.”

from the FBCB2 to task the scout weapons team.

Ground situation report, instructions, and coordination (what the platoon leader tells the scout weapons team):

- ✓ Enemy (where, how many, direction of movement, priority targets, air defense artillery threats).
- ✓ Friendly (forward line of own troops, locations of units in contact).
- ✓ Mission (who, what, where, when, why).
- ✓ Commander’s intent (what the commander wants you to do).
- ✓ Fire support available and locations of guns and mortars.

Mounted Security Formations

Mounted security formations provide security, command and control, and projection of combat power. There are two basic mounted security formations; deciding which one to use depends on the terrain through which the convoy will be moving, the experience and competence of the unit, and the number of escorted vehicles. As with all procedures, there are advantages and disadvantages to each formation. It is important to note that in the example of each formation, four gun trucks are used. If there are more gun trucks available, they can be incorporated into the formation.

As shown in Figure 1, the first formation has a total of four gun trucks as a security element; two gun trucks are positioned in front of the convoy and two gun trucks in back of the convoy. If the unit makes contact, the lead gun truck can engage the enemy while the second gun truck bypasses the convoy following behind. The gun truck directly behind the convoy (the third gun truck) can follow, pulling rear security, while the fourth gun truck assists the lead gun truck in engaging the enemy. This formation is ideal for built-up areas with crowded and narrow streets. The formation provides better command and control because all four gun trucks are with

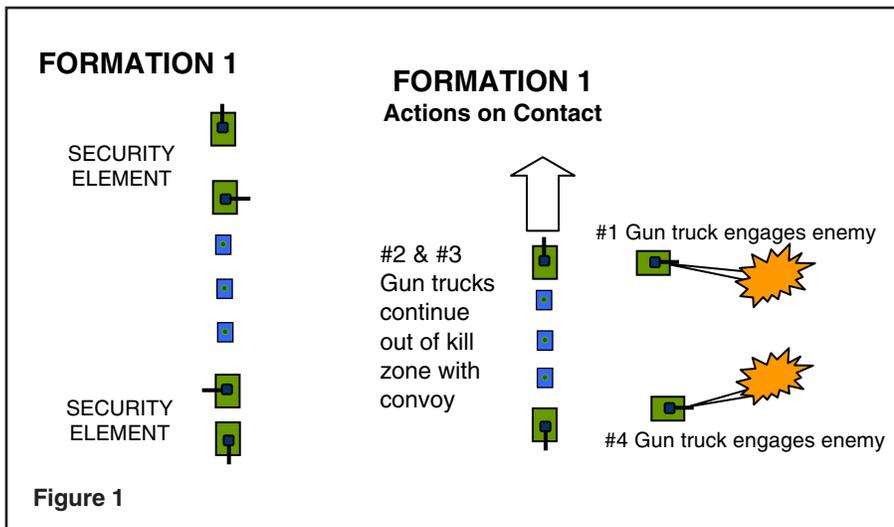


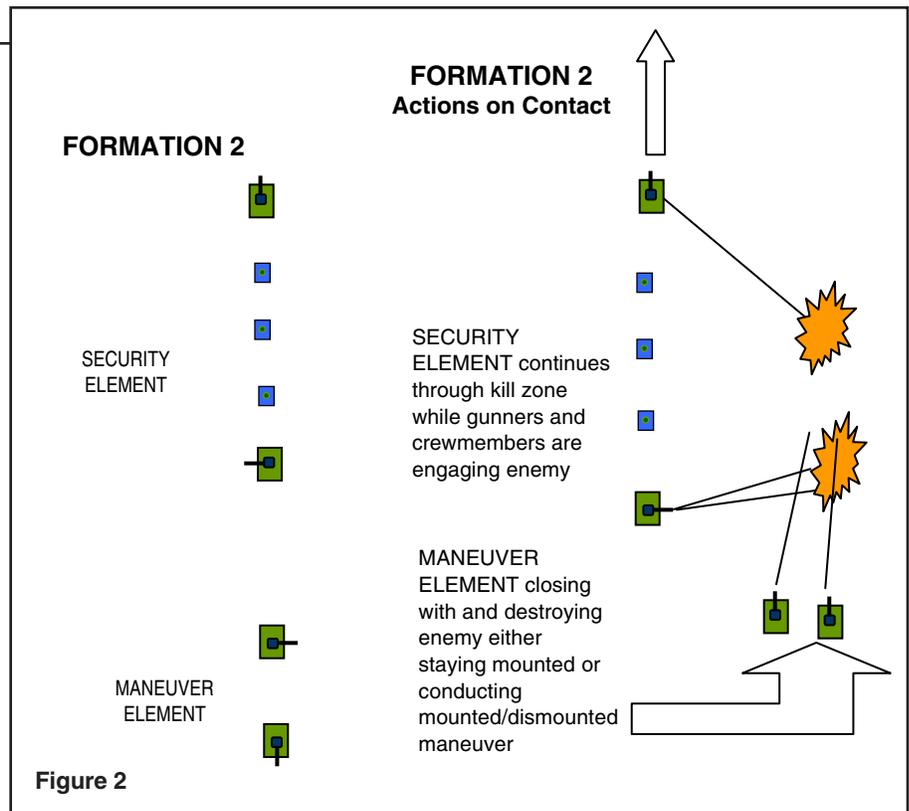
Figure 1

the main body of the convoy. Because of its simplified command and control and its reduced requirement for land navigation skills, this formation is also best suited for units with leaders and soldiers who are inexperienced with executing mounted security missions.

The second formation, as shown in Figure 2, also has a total of four gun trucks, which includes a security element and a maneuver element. The security element has one gun truck that leads the convoy. The second gun truck will be directly behind the convoy's main body. The maneuver element consists of the third and fourth gun trucks traveling behind the convoy or to its front. The traffic, terrain, and enemy situation determine where the maneuver element travels in relation to the convoy, as well as the distance between the maneuver element and the convoy's main body. When the convoy gains contact, the security element returns fire and maneuvers the convoy out of the immediate area. All convoy vehicles should follow the lead gun truck. The maneuver element maneuvers on the enemy. In the event of a damaged vehicle, the rear gun truck of the security element can be used to evacuate personnel, or the maneuver element can be brought in to execute evacuation as well. This formation is ideal for traveling on highways or through cities where roads are wider. When the highest threat is assessed to be an IED, placing the maneuver element behind the convoy often gives that particular element a better chance of identifying the trigger man for the IED. For units with experienced leaders and gun truck crews, this formation is ideal because it provides security to the convoy and gives the mounted security patrol leader the option to maneuver on and destroy the enemy.

The competence of the gun truck crews should be a factor in determining which formation to use. The second formation, with a security and maneuver section, is required to operate independently of each other during contact. This section has to be proficient at land navigation, air-ground integration, MEDEVAC, and platoon battle drills. Leaders need to assess the proficiency of their gun truck crews before determining which formation to use. A unit tasked with providing mounted security that might be inexperienced, has just received new replacements, or may not be familiar with its team members, may not want two separate elements and should therefore use the first formation with four gun trucks as a security element for ease of command and control.

In some instances, the mounted security patrol leader will not be the convoy commander. In these cases, it is essential



that the patrol leader brief his security plan to the convoy commander. Gun trucks in the mounted security role bring maneuverability, mobility, and firepower to the fight. It is essential that the convoy commander understand the capabilities of the mounted security patrol. For example, infantry companies riding in five-ton trucks have firepower, but do not have maneuverability or mobility to their advantage. The mounted security escort has both mobility and firepower, and therefore would be best suited to maneuver on the enemy, not the infantry company riding in five-ton vehicles.

Procedures for Traffic Control

Controlling traffic is an important part of providing security for the convoy and a critical task in the mounted security mission. The following are proven procedures that worked throughout Iraq in mounted security missions.

Actions at traffic circles:

- Convoy slows as it approaches traffic circle.
- As the convoy prepares to enter the traffic circle, the rear gun truck is positioned to block the flow of traffic into the traffic circle from the rear.
- The lead gun truck cuts wide into the traffic circle.
- The rear gun truck blocks traffic until the rest of the convoy has safely entered the traffic circle. The rear gun truck then

moves to block traffic from the middle of the traffic circle, ensuring no traffic interferes with the convoy's movement. The rear gun truck then rejoins the convoy.

- Gunners are standing in the hatch, M16/M4 at the ready, looking for enemy and IEDs.

Road intersections:

- When the convoy approaches an intersection, the lead gun truck alerts the patrol over the platoon net.
- The lead gun truck slows down, and the rear gun truck offsets in other lane to slow down the flow of traffic into the intersection from the rear.
- The lead gun truck eases into the intersection.
- The lead gun truck tells the rear gun truck where to block traffic to facilitate a successful maneuver through the intersection.
- The rear gun truck then rejoins the convoy after the convoy has passed through the intersection.
- If traffic is halted, see "Actions at Traffic Stops" on the next page.
- Gunners are standing in the hatch, M16/M4 at the ready, looking for enemy and IEDs.

U-Turns:

- When executing a U-turn, the lead gun truck alerts the patrol over the platoon net.

- The lead gun truck slows down.
- The rear gun truck offsets in the other lane to slow down traffic from the rear.
- The rear gun truck then moves along the side of the convoy, executes the U-turn, and stops in the opposite lane to block oncoming traffic. In a four-gun truck patrol, the rear section can execute this action.
- The rear gun truck holds this position until the convoy has executed the U-turn and then rejoins the convoy.
- Gunners are standing in the hatch, M16/M4 at the ready, looking for enemy and IEDs.

Actions at Traffic Stops:

- Gunners are standing in the hatch with M16/M4 at the ready, looking for any enemy or suspicious activity.
- The rear gun truck offsets in the other lane to stop the flow of traffic from the rear and prevent traffic from approaching near the gun trucks or convoy vehicles.
- If Iraqi police are present at the traffic stop, let them control traffic; this allows Iraqi citizens to see Iraqi policemen controlling the situation, which instills confidence in new government.
- If there are no Iraqi police at traffic stops, tank commanders dismount and direct traffic to allow the convoy to pass through the intersection.

Crossing Overpasses/Underpasses:

- The lead gun truck alerts the underpass patrol using the platoon net.

• The lead gun truck slows down and assesses the traffic situations on the underpass and the overpass.

• If the traffic on the overpass is flowing faster than the traffic in the underpass, use the overpass route.

• The lead gun truck determines the flow of traffic in the underpass and makes a decision whether the convoy can move through without stopping or if it will have to stop and wait for traffic to clear.

• The rear gun truck offsets in the other lane to stop all traffic from entering the underpass.

• Tank commanders dismount and pull security, looking for any enemy or suspicious activity.

• Gunners are standing in the hatch, M16/M4 at the ready, looking for any enemy or suspicious activity.

• When traffic clears in the underpass enough to allow the convoy continuous uninterrupted movement, the convoy moves toward the underpass. The lead gun truck will move through the underpass first, clearing the far side before the convoy moves through.

• The convoy enters the underpass in one lane and changes lanes while in the underpass, exiting in a different lane from which it entered (vehicles may stay in the same lane to keep the enemy guessing).

• As a convoy approaches the underpass, gunners are scanning the overhang with M16/M4 at the ready, watching for ene-

my forces waiting to shoot or drop something on the convoy.

• As a convoy exits the underpass, gunners face to the rear with M16/M4 at the ready, watching for enemy force waiting to shoot or drop something on the convoy.

Crossing Danger Areas:

• The lead gun truck identifies danger areas and alerts the patrol over the platoon net.

• The lead gun truck slows down the convoy's speed.

• The lead gun truck then shoots across the danger area while the gunner stands in the hatch, scanning for enemy and IEDs. The tank commander also scans his sector for enemy and IEDs.

• Once the lead gun truck has reached the far side of the danger area, the convoy resumes its speed and moves through the danger area. The gunners and tank commanders of the remaining gun trucks scan for enemy and IEDs.

Mounted Security Battle Drills

Battle drills are how mounted security patrols apply fire and maneuver to commonly encountered situations. They require leaders to make decisions rapidly and to issue brief oral orders quickly. As mentioned earlier in this article, battle drills that should be incorporated into the platoon's SOP include reacting to an IED that has not detonated, reacting to an IED that has detonated, and reacting to ambush.

On today's battlefield, units are required to provide mounted security for their own convoys and logistics operations. A unit's ability to accomplish the mounted security mission depends on properly executed troop leading procedures and a well rehearsed security and maneuver plan.



"The traffic, terrain, and enemy situation determine where the maneuver element travels in relation to the convoy, as well as the distance between the maneuver element and the convoy's main body. When the convoy gains contact, the security element returns fire and maneuvers the convoy out of the immediate area."



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A Lesson Learned

Post Traumatic Stress Disorder

by Captain K.C. Hughes

Even in the age of the cruise missile and the M1A2 Abrams tank, no matter how destructive military equipment might become, little can be achieved without the contribution of individual soldiers on the ground. Whether holding key terrain or resupplying combat units, today's soldiers are at risk from the same threats American soldiers faced two hundred years ago.

Technology has improved our weapons systems and their destructive capabilities, but it has done little to improve the human body's ability to take a bullet or to absorb the energy of an explosion. Similarly, technology has done little to improve the human mind's ability to assimilate and deal with trauma, and the trauma of war has certainly not changed over the years. Just as in the wars of America's past, the loss of a fellow soldier, the terror of combat, or the emotional pain of killing another human being is an experience faced by many soldiers in today's

Army. The emotional trauma of combat that soldiers experience often results in post traumatic stress disorder (PTSD).

Barely a year after the first troops returned from Operation Iraqi Freedom, signs of PTSD became apparent everywhere and are quickly becoming a problem for leaders throughout the Army. With soldiers preparing to depart from or deploy to Iraq, a basic knowledge of PTSD will become increasingly valuable and necessary. Much like the body armor that protects a soldier's body from the impact of battle, knowledge of PTSD will help soldiers cope with the emotional and psychological impact of battle.

Although a relatively new term, PTSD has been around for many years. During the civil war, it was called "nostalgia," and it was believed that the soldier's strange behavior was caused by an intense desire to return home. During World War I, it

was called "shell shock," and considered a disorder of the central nervous system brought on by the constant shelling and explosions of trench warfare. In World War II, it was thought that soldiers experienced "battle fatigue," a short-term response to the conditions of the battlefield. The typical treatment for a soldier was seven days away from the front line followed by return to duty. It was never considered to be a long-term problem, although in World War II, American fighting forces lost 504,000 men to psychiatric collapse, or "battle fatigue."¹

In the years following World War II, even those who had no symptoms during the war and had been discharged from the Army in good health, began showing up at veteran's hospitals with the same symptoms as soldiers discharged with battle fatigue. Vietnam veterans seemed to be affected by this syndrome to an even greater extent. It was estimated that one-third



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of Vietnam veterans suffered from what we now call PTSD.² Little was understood of this problem, and treatments seemed ineffective. It was not until researchers noticed that survivors of plane crashes, natural disasters, and terrorist acts displayed the same symptoms that progress began to be made. In 1980, the American Psychiatric Association included PTSD in its *Diagnostic and Statistical Manual III*, the standard book used to diagnose emotional disorders.

The National Center for Post Traumatic Stress Disorders defines PTSD as "a complex of distressing emotional reactions that can follow the experiencing of any kind of traumatic event, such as an accident, severe illness, natural disaster, rape, or combat."³ It can occur both during the traumatic event, in the form of a breakdown, or after the event, by which it is revealed through a number of possible different symptoms. The National Center for Post Traumatic Stress Disorder further explains that, "People who suffer from PTSD often relive the experience through nightmares and flashbacks, have difficulty sleeping, and feel detached or es-

tranged, and these symptoms can be severe enough and last long enough to significantly impair the person's daily life."⁴ These symptoms can vary from person to person and in levels of severity. The symptoms range from depression, to uncontrollable anger, substance abuse, and even problems of memory retention and cognition. For example, one soldier might feel estranged from his family upon returning from war, and another may feel the desperate need for security from his family; one soldier may beat his wife or children, and the other will distance or isolate himself from peers and family members. Often the secondary, long-term effects of the symptoms of PTSD can become the more significant problem. For example, simple symptoms, such as chronic lack of sleep, can result in poor work performance. Problems, such as substance abuse can surface and eventually dominate a soldier's life. Family problems will worsen and possibly end in injuries to the spouse or children. Seldom will these symptoms simply disappear; they must be identified, confronted, acknowledged, and treated. To aid soldiers and families who suffer from PTSD, leaders must be

aware of the wide diversity of symptoms and treatments.

The National Center for PTSD explains the neurological processes of PTSD: "PTSD is associated with a number of distinctive neurobiological and physiological changes. PTSD may be associated with stable neurobiological alterations in both the central and autonomic nervous systems, such as altered brainwave activity, decreased volume of the hippocampus, and abnormal activation of the amygdala. Both the hippocampus and the amygdala are involved in the processing and integration of memory. The amygdala has also been found to be involved in coordinating the body's fear response. Psycho physiological alterations associated with PTSD include hyper-arousal of the sympathetic nervous system, increased sensitivity of the startle reflex, and sleep abnormalities."⁵

This definition may be difficult to understand, but more simply put, in a time of extreme crisis, such as combat, the human brain pushes the human body into overdrive. Anyone who has been in combat or any situation involving a height-

ened state of fear or stress has experienced the adrenaline rush. This adrenaline rush is an effect caused by the adrenal glands in the body manufacturing epinephrine, cortisol, and norepinephrine.⁶ These chemicals are responsible for giving the human body the energy it needs for fight or flight. The human body relies on this hyper-arousal to survive. Additionally, in times of pure terror or crisis, the body might release endorphins, “natural chemicals made by the brain that resemble painkilling drugs or opiates.”⁷ These chemicals cause soldiers to ignore pain and give the “out-of-body” feeling that is described by many during traumatic events. This survival technique is called emotional numbing.⁸ These natural reactions appear to be temporary, so why would they cause long-term emotional disorders? Some scientists believe that the combination of the norepinephrine and endorphins help us to learn quickly and permanently.⁹ This “super learning” is helpful because it teaches the human body to stay alive in similar situations. Therefore, some researchers believe that this permanent lesson during traumatic situations results in the development of PTSD. Many soldiers who return from Iraq complain about jumping at loud bangs. This is an example of a

permanent lesson learned in combat. The mind has connected the loud bang to a reflex, which scientists refer to as “triggers.” The trigger to a loud noise is simple to understand and PTSD symptoms can be triggered by a movie or conversation that a soldier has had during the day. It is identifying these triggers during treatment that helps soldiers cope with and manage PTSD.

Like most armor officers, I am not a psychologist, nor can I even begin to understand the innermost workings of the brain and body. However, I can confirm that it does not take a psychologist to identify PTSD, and identification is the first step in helping soldiers cope with PTSD. To identify PTSD, a leader must know his soldiers and note personality or behavior changes. Obvious symptoms include frequently being late to formation or documented family problems. More insidious symptoms caused by PTSD could include internal friction in a platoon or noticeable decreases in performance.

Most soldiers will attempt to hide emotions and problems from their supervisors, especially in an all-male environment such as the armor branch. It is essential that leaders watch for and acknowledge symptoms and promptly seek help

for soldiers. Chaplains are a good resource because they have extensive training in PTSD. There are also resources at all Army installations for commanders and leaders to use, particularly in Iraq. A commander can employ the use of installation psychiatrists, and most units in Iraq have access to combat stress teams. Simple classes on PTSD for soldiers and first-line leaders will assist in helping soldiers cope with PTSD. It is a leader’s responsibility to seek all available resources and get treatment for affected soldiers.

There are a variety of different techniques available for treating PTSD. Once identified, the treatment will typically begin with an evaluation of the soldier. Developing a treatment plan that meets the needs of the individual soldier will follow the evaluation. There are numerous ways to treat the disorder, depending on the symptoms. One of the first phases of treatment is simply educating the soldier and his family on the effects of PTSD. This can also be done at the company level with a short class from a combat stress team. Additionally, most treatments will attempt to resolve any sort of guilt or anger remaining from the traumatic event. It is also important that specific triggers

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Air-Ground Integration

by Captain Shawn Hatch

Conventional U.S. Army doctrine applies aviation assets primarily to the linear battlefield — the traditional Cold War-style battles on relatively open terrain. In fact, current doctrine recommends “isolating and bypassing urban areas when possible due to the costs involved.”¹ While operating in an urban environment may be costly, it will be much more costly to fail to adapt and not have any aviation assets fighting along side ground maneuver units. We see that battles and wars are increasingly less linear and executed less on open terrain. Instead, wars are often fought in and around built-up urban terrain. Much of the doctrine for the linear battlefield applies in this urban and non-contiguous battlespace, but U.S. Army aviation procedures must adapt drastically to accommodate this new battlespace. Many of these adaptations have occurred in the aviation community, and many more are ongoing and yet to be discovered. However, the best procedures and application of aviation assets are useless if they are not properly integrated with ground assets, which aviation assets must support.

Aviation is potentially the greatest untapped combat multiplier in the urban environment; failing to learn and apply these qualities may prevent the U.S. Army from maintaining its dominance as the world’s greatest and most adaptable military force.

This article provides a general understanding of some concepts to consider when integrating aviation assets into the ground maneuver plan; it will look at three areas: roles of Army aviation, planning considerations, and air-ground synchronization of aviation assets in the urban environment. Current doctrine is evolving slowly and has already adopted some of these concepts; however, some concepts are currently being practiced but are not reflected in current doctrine, and some of these concepts are all together original and not currently practiced anywhere.

Roles of Army Aviation

Army aviation is arguably the most maneuverable branch of the Army. As a result of its maneuverability and unique charac-

teristics, it has the capability of performing certain roles and missions with greater speed, less danger to soldiers, and more effectively than any other combat asset. Tables 9-1 through 9-4 in U.S. Army Field Manual (FM) 3-06.11, *Combined Arms Operations in Urban Terrain*, do a good job listing many of the roles in which aviation can be employed.² However, this is not an exhaustive list and some roles and missions should be expanded with further clarification. These tables are organized by the four main categories of operations that commanders in the urban environment must conduct: assess and shape; dominate; transition; and stability and support.

Assess and Shape. This category includes the traditional cavalry role of reconnaissance. Contrary to FM 3-06.11, aviation possesses the ability to perform reconnaissance in much more than just the “urban peripheral area.” Air cavalry units (and in some cases, lift and attack units) are currently being used daily to recon deep into the heart of urban terrain.



Certainly, the aerial observation provided by these units is slightly limited by structures and the high concentration of other obstacles common to urban terrain, but some areas, such as rooftops, around corners, and open-top entrenched areas, are much more readily observable from the air. Most casualties sustained in the urban environment occur when moving between buildings, down streets, and through open areas; these casualties can be reduced by using a reconnaissance platform capable of seeing around corners, on rooftops, and other areas not visible to maneuvering ground forces.³

Another unused role of aviation in the assess-and-shape category is that of a deception force. When needed, helicopters can be a very noticeable presence both during the day (visual) and at night (audible). This is especially true in many of the world's underdeveloped urban areas where other civil aviation assets are limited, making Army aviation assets more apparent. Using this factor, the battlefield can be effectively shaped, causing the enemy to believe operations are occurring where they are not.

Dominance. The cordon mission paired with any of its variants, such as knock, search, and destroy, is ideally suited to aviation support. Starting from route reconnaissance to the cordon objective and then focusing both in and out (as discussed later in planning considerations), helicopters provide the ground commander with a critical view of the objective, making the cordon more secure. Early warning from an aerial view prevents any element from moving in or out of the cordon, which may have otherwise passed through the cordon undetected, especially during the initial establishment of the cordon.

Stability and Support. Experience in Operation Iraqi Freedom (OIF) has shown that aviation can play several roles during stability and support operations. Improvised explosive devices (IEDs) are one of the most deadly enemy actions used in Iraq. Many of these IEDs, and their potential locations, can be located using aerial reconnaissance. Lines of communication (LOC) security is a common role that incorporates aerial reconnaissance, which is a variation of a route reconnaissance, but is done routinely and focuses on a few elements as dictated by the ground commander. These elements can include trafficability of the LOC, potential threats (including IEDs), and the presence of known or suspected enemy along the LOC. A close variant of LOC security is convoy



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security. Aviation has a significant advantage in assisting ground forces in this area in the urban environment. In addition to providing suppressive fires in support of the ground convoy, aviation assets provide early warning offered by the aerial perspective, a marked advantage when buildings limit the ground unit's field of view.

A proven role of aviation is the presence patrol. The psychological factor of a helicopter is a significant deterrent to would-be disrupters of stability. But, the aerial presence patrol offers much more than just a psychological deterrent; aircraft can cover a much larger area in a presence patrol than a ground unit, and still observe much of the same activities as a ground presence patrol. Intelligence analysts in the 502d Infantry Regiment, 101st Airborne Division (Air Assault), deployed in Mosul, Iraq, from May 2003 to January 2004, noted that there was a significant decrease in insurgent activity when presence patrol aircraft were on station. In the absence of continuous aerial operations, aerial presence patrol schedules were shifted continuously and irregularly to convey the sense of continuous aerial coverage, thus decreasing insurgent activity.

Aviation roles in the urban environment are only limited by our ability to adapt. Current doctrine lists common roles, but these should not be considered all inclusive. Limiting aviation to traditional roles will fail to maximize its unique advantages, and rob the ground commander of limitless opportunities against the enemy.

Mission Planning Considerations

The aviation liaison officer (LNO) is critical to properly employing all aviation assets at the discretion of the ground commander. The LNO should be the resident expert on the capabilities and limitations of his unit and know how to best use its capabilities to support the ground mission. At the same time, all planners involved in the military decisionmaking process (MDMP) should, at a minimum, be familiar with some basic planning considerations, such as aircraft station time and rotation plan, hovering and graphic control measures, inner loop/outer loop security, and objective altitude planning, for using aviation in an urban environment.

Aircraft Station Time. Planning for cavalry and attack aircraft should almost always assume that aircraft will operate in teams of two aircraft. While this is not doctrine, the "hunter/killer" team approach is a proven technique that, in my experience, is nearly universally followed. This will effect planning for the amount of ammunition available, observable area, and speed for reconnaissance missions. However, the greatest consideration for this is the time on station and rotation plan. Without extended fuel tanks, Army helicopters universally have about a two-hour station time based on fuel. When planning any operation, this can be a significant consideration, especially if continual coverage is necessary. A common tendency is to request teams to split up and refuel separately, leaving one on station while the other refuels. While possi-



“The 3d Infantry Division attributed the high survivability of the OH-58D Kiowa helicopters in urban environments during OIF to the “movement techniques used by the aircrews.” Kiowas operated at or below 50 feet above ground level, while maintaining at least 60 knots. The bottom line: planning restrictive control measures, such as attack by fire positions, which force helicopters to remain over a relatively small piece of terrain, endangers the mission.”

ble, this is a highly undesirable technique and should be avoided. Therefore, it may be necessary to employ multiple teams and establish a rotation or plan for gaps in coverage, depending on the distance between the operation and the refuel point.

Hovering Flight. A difficult lesson learned during OIF is that hovering in the urban environment does not work. Numerous news sources commented on the notably greater survivability of helicopters that continued to move while fighting over cities in Iraq, verses hovering and near-stationary aircraft, even in higher-threat environments.⁴ The 3d Infantry Division attributed the high survivability of the OH-58D Kiowa helicopters in urban environments during OIF to the “movement techniques used by the aircrews.” Kiowas operated at or below 50 feet above ground level, while maintaining at least 60 knots.⁵ The bottom line: planning restrictive control measures, such as attack by fire positions, which force helicopters to remain over a relatively small piece of terrain, endangers the mission. This may appear to be a simple principle to maintain, but as the plan gets more and more complicated, and more assets fight for the same time or space, deconflicting airspace and direct fire control can become quite complicated and the easiest remedy is to “cut the legs off” the helicopters, forcing them to stand still. Alternatives must be found to rule out a plan that includes stationary aircraft.

Inner Loop/Outer Loop Security. Many operations in urban environments neces-

sitate an “inner loop/outer loop” security pattern. This is very similar to how a ground element would focus observations during cordon operations, but executed quite differently. Cordon and isolation operations often occur on a relatively small objective; to avoid hovering flight, helicopters must constantly circle to stay within operating distance from the objective. If the objective is only a city block or smaller, two aircraft are very cramped for airspace. The inner loop/outer loop security pattern allows both aircraft to make concentric circles in opposite directions around the objective. The inner aircraft focuses observation inward in the circle, and the outer aircraft outward. The circles are in opposite directions to allow the pilot who is not operating the controls clear observation, while the pilot operating the controls can see and deconflict with the opposite aircraft. This technique provides observation on the actual objective, as well as outside the objective, offering a terrific advantage to the ground commander in cordoning or isolating the objective. This technique can also be conducted with a larger element (two teams of aircraft or more) on a larger objective such as a small village. In this case, one team would provide the inner loop security while another team provides the outer loop security. In either case, this technique allows the flexibility for any member of the team to divert temporarily from his assigned sector to support the other, should additional observation or firepower be required.

Altitude. An often-overlooked common consideration for planning is the altitude

of supporting aviation. In the case of a cordon or raid, the ground commander should consider the impact of supporting aviation at various altitudes. While lower aircraft (50 to 200 feet) provide better, more detailed observation, they may alert enemy forces to friendly troops’ presence, increase noise for ground personnel, and blow over weak structures or other loose debris in the area. When planning operations in the urban environment, it is critical to consider the third dimension to achieve the appropriate results.

Air/Ground Synchronization

Perhaps the greatest challenge in air-ground integration is synchronizing the viewpoints of air and ground components. Ensuring that all players are looking at the same target, building, vehicle, window, or other item has proven to be significantly difficult in the urban environment. Several methods exist to enhance the common operational picture and allow for expedient target designation, but none are foolproof — a concerted focus on building new technologies to solve this problem is certainly needed.

In an urban environment, an eight-digit grid has little significance due to the proximity of urban features, as well as the vertical development common in many cities. Even if a highly accurate grid for a certain target were available, correlating that grid with a specific piece of terrain expeditiously is very difficult, even for the best soldiers. Therefore, current doctrine incorporates the use of several maneuver graphic aids, including the area sketch, urban targeting grid sectors, and

“bulls-eye” or target reference points (TRP).⁶ Each of these techniques has certain advantages and limitations, which make them more or less suitable in varying environments, and often a combination of techniques is needed to accomplish the mission. Still, the perfect solution for this problem has yet to be found.

The area sketch may include a detailed drawing of all buildings and other significant terrain features in an area, all individually numbered and the corners of each building labeled to aid in building orientation. Phase lines, objectives, and other graphic control measures are not uncommon to aid in rapid target identification. Advantages to this technique include a highly detailed description of the area, high reliability when describing a numbered feature, and the ability to describe

sides of oddly shaped buildings, especially when they do not conform to cardinal directions. However, the amount of pre-mission coordination required for this technique is quite significant. In addition, ensuring that all elements down to the lowest level have the same area sketch is very difficult. Larger objectives will be difficult to describe in the same way without creating a massive sketch, which is not practical for tactical operations.

Similar to the area sketch is the urban targeting grid sectors. In this technique, an objective or area is broken down into a certain grid. Buildings and prominent features are labeled within each sector. This has many of the same advantages and disadvantages of the area sketch. It is not realistic to number every building and prominent feature within a large area.

The 502d Infantry Regiment used a similar technique while in Mosul, Iraq, but without numbering every building. This was affectionately called the “horse-blanket,” where grid sectors were labeled with a two-letter identifier, the first letter indicating the owning battalion. This worked well for ground units who concentrated on relatively small areas and moved at a slower pace, but it was difficult for fast-moving aviation units covering the entire city to maintain accurate situational awareness at all times due to the high number grid sectors.

Finally, the bulls-eye or TRP technique is a much more simplified method that simply identifies a series of easily identifiable terrain features called “bulls-eye” or “TRP.” Targets are described using a bearing and distance from the closest



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bulls-eye. This technique is easily applied and is the simplest for coordination between units, but it does not provide for very accurate target locations.

Despite all best efforts, most air-ground target synchronization eventually boils down to a target “walk on,” where either the ground or air unit begins with one or more of the techniques discussed above to synchronize viewpoints in the same general area, and final guidance is given by either a verbal or visual cue. While these are good techniques, they are not always sufficient, and a few additional procedures and future technologies are needed. These techniques include creating a standard vehicle identification (ID) list, simplifying and organizing large cities, and using real-time video communications through Force XXI battle command, brigade and below (FBCB2) or similar technology.

Most maneuver units have a library of threat vehicles that every soldier is responsible to identify. In the emerging urban environment, the enemy will not always use a clearly identifiable T-72, so units must modify libraries of threat identification. What one soldier describes as a “box van” may be very different from another soldier’s perception of that same vehicle. Additionally, where a soldier at a traffic control point can read the make of a car and possibly its license plate, these identifying marks are nearly impossible to see from aviation assets, especially at night. Units should develop a library of vehicle identification, as seen in Figure 1, to standardize vehicle descriptions, which will prevent miscommunications of a vehicle description. A 90-percent accurate library can be easily reached, and it can be modified when the unit changes its area of operations.

Urban environments in non-English speaking nations create the challenge of U.S. soldiers being unable to pronounce, and thus remember, names of places, roads, and other landmarks. A technique to effectively coordinate between various U.S. units is to simplify cities by renaming (at least for military use) main supply routes, key landmarks, and other key plac-

es. Nicknames will inevitably develop, but the key is to make these nicknames official so that all units use the same, easily pronounceable names. This is similar to the area sketch and bulls-eye technique, but focuses primarily on a few key routes and landmarks. Directing a ground quick reaction force from an aviation platform to a specific target is greatly simplified if both units are using the same names (not necessarily found on street signs unobservable from the air) along key routes. The alternative (take your next left then go one mile) is confusing and can quickly cause the ground unit to become disoriented.

Finally, both ground and air units would benefit greatly from future technologies that incorporate real-time video broadcasted to other involved units over an FBCB2 or similar system. Designating a certain building, landmark, or other feature and then broadcasting that exact picture to the supporting air unit, would eliminate any confusion over the exact target identification; leaving no question of which building, door, window, or other feature was the target.

Aviation plays a vital role in the success or failure of operations in urban terrain. We cannot be bound to traditional roles and thus fail to adapt to the threat and challenges found in the urban environment. Planners must have a working knowledge of aviation considerations so they can maximize the use of aviation assets and get exactly what they need to successfully accomplish the mission. Finally, the perfect role and best plan are useless if air and ground forces cannot effectively communicate and synchronize their points of view. Prior thought and planning is essential to ensuring everyone is looking at the same target, especially in the midst of high-stress situations. Combat helicopters can fight in unmatched ways; failing to properly integrate them in the urban environment is detrimental to the U.S. Army’s success.



Notes

¹U.S. Army Field Manual (FM) 3-06.1, *Aviation Urban Operations: Multiservice Procedures for Aviation Urban Operations*, U.S. Government Printing Office (GPO), Washington D.C., 15 April 2001, p. 1-1.

²FM 3-06.11, *Combined Arms Operations in Urban Terrain*, GPO, Washington D.C., 28 February 2002, pp. 9-2 to 9-4, Appendix A.

³Ibid, p. 4-32.

⁴Robert Blackstone and Dorothy Norton, *Evaluating Military Operations on Urbanized Terrain (MOUT) Tactics, Techniques, Technologies and Procedures (TTPs): Observations from Operation Iraqi Freedom (OIF)*, Project Metropolis, Marine Corps Warfighting Laboratory, 8 August 2003, pp. 44-49.

⁵The U.S. Army 3d Infantry Division (Mechanized) After Action Report, Chapter 5, p. 25.

⁶Each of the publications in the FM 3-06 series discusses an element of air-ground coordination, much of which is covered in this paragraph. This discussion has tried to simplify the different techniques found in all of the publications to their basic components.

	Compact Sedan
	Full Size Sedan
	Passenger Van or Cargo Van
	Small Box Van (14 Ft. box)
	Box Van or Water/Fuel Truck
	Semi-Trailer

Figure 1

Captain Shawn Hatch is currently a student at the Armor Captains Career Course, Fort Knox, KY. He received a B.S. from the United States Air Force Academy. His military education includes Aviation Officer Basic Course and Initial Entry Rotary Wing Course. He has served in various command and staff positions, to include squadron rear detachment commander, 2d Squadron, 17th Cavalry Regiment (2-17 CAV), 101st Airborne Division (Air Assault), Fort Campbell, KY; squadron S1, 2-17 CAV, 101st Airborne Division, Fort Campbell; flight operations officer, 2-17 CAV, 101st Airborne Division, Fort Campbell; platoon leader, A Troop, 2-17 CAV, 101st Airborne Division, Fort Campbell.

Employing Armor in Urban Combat

by Lieutenant Colonel David Eshel, IDF, Retired

After every war, since 1918, prime military analysts predicted that the “tank was an obsolete weapon” and it was time for it to be replaced. Some U.S. officials have already set the date to cease production of the M1 Abrams tank, replacing it with the lighter system Stryker as a stop-gap, and ultimately the much-debated Future Combat System (FCS).

Despite all the talk, lessons emerging from Operation Iraqi Freedom reveal that during high-intensity combat, the role of the main battle tank is far from over. In fact, both the Abrams and Challenger have more than proven their mettle in combat and are an indispensable element in the fast-moving strike through Iraq.

Disregarding political implications, professional soldiers are confident that there is no current replacement for the combination of mobility, firepower, and protection offered by the main battle tank. Experiences in Israel and Iraq have demonstrated (assuming correct tactical employment) that the main battle tank’s contri-

butions are vital to reducing an otherwise unacceptable loss of ground forces.

Adapting Armor to Urban Warfare

To readjust armor, primarily tanks, to fight in an urban environment, two elements must be considered: adaptation of tactics by the small unit combined combat team; and certain modifications to the tank’s infrastructure to enhance its protection and firepower for close-in combat.

Tactical Aspects

The first rule in armored combat is: “A lone tank in the all-round risk nature of the urban battlefield is a dead tank.” Thus, to a tanker, even the best trained infantry support does not secure the tank’s survival against lurking tank-killer teams. To experienced tank crews, the employment of individual tanks supporting infantry squads is a worst-case scenario, which they hope to avoid. Like fighter pilots, tankers rely mostly on their ‘wingman’ tank for protection. But the com-

partmentalized and restricted nature of urban combat terrain not only reduces the line of sight of the tank/tank teamwork, but actually minimizes the tank’s inherent fighting power. Many of those limitations become serious liabilities, which in many cases, makes the normal tank/wingman overwatch drill nearly impossible. Naturally therefore, most traditional tank proponents warned against employing tanks in an urban environment for several reasons, some of which not only seem natural, but most result from inappropriate use of tanks by infantry commanders, who are unfamiliar with the limits of tanks in the heat of battle.

While concern that the heavy cumbersome 60-ton colossus could collapse bridges, chew up city streets, or cause unacceptable collateral damage is acceptable, single tanks can become trapped in narrow alleys, having been called in to support foot soldiers pinned down by heavy enemy fire. Under such circumstances, the single tank becomes a dangerous liability.





"To improve restricted observation, panoramic optics are installed in the tank commander's position, from which he has an all-round observation arc. Other means are mast-mounted gimballed sensors with look-up/look-down capability. Installing observation cameras around the tank's hull in deadspace areas, especially vulnerable zones, is another cost-effective method. Such a system has been mounted on the Merkava Mk4, enabling the driver to reverse without external guidance."

ty to the troops. Not only is a stationary tank a prime target to enemy tank-killer snipers, but it becomes a focal point to hazardous enemy artillery and mortar barrages endangering not only the tank, but the very infantry that unintentionally called it into the lethal trap.

Indeed, a tank is not an ideal platform for block-by-block fighting in a city, not to mention the confines of Middle East Iraqi bazaars, or the cramped surroundings of Palestinian refugee camps, in which Israel Defense Forces (IDF) tanks are frequently forced to operate. This is nightmare country for young Israeli tankers and they hate it. But there are other problems, which are lesser known to the layman. The powerful tank engine emits tremendous heat from its exhaust fumes, which can virtually 'cook' a nearby soldier seeking the tank's armored hull for protection. Additionally, once the main armament is fired, it emits poisoned gases and the powerful force can cause lethal concussion to bystanders, especially in the confines of narrow streets surrounded by multi-story buildings.

There are some important tactics that the IDF have refined for urban combat, some of which were ideally suited, and even implemented by coalition forces during Operation Iraqi Freedom. A key factor in urban warfare is the combined combat team, usually fighting at squadron/company-platoon/troop level, but mostly at squad/section level. This means, that with a three-tank troop, a single tank remains idle and is frequently used by infantry commanders, insufficiently familiar with

the technical shortcomings of the tanks as single support platforms. In the IDF, a conscript army, the single tank commander is usually a young sergeant who is under the command of an infantry officer, while his troop leader fights with the two-tank section (in a four-tank platoon, each two-tank section is commanded by an officer or senior noncommissioned officer).

In professional armies, such as those of the U.S. or Britain, this problem may be less complex, as the tanker may well be more experienced than the infantry subaltern who may listen to his advice. The tank/infantry combat team fighting in a high-risk urban environment can only survive if it operates in close mutual support, which requires each team to maximize its inherent strength and minimize its inherent weaknesses against the enemy.

As the tank crew is operating 'closed down' (all hatches shut), its all-round vision is reduced to the effectiveness of the optical vision blocks. Most of these are designed for open country warfare, namely to the frontal arc, for tank-on-tank fighting. Thus, the tank crew cannot properly see the accompanying infantry. To enable the infantry commander to designate targets to the tank, communication is vital, but visual hand signals cannot be used. Infantry laser target designators are virtually ineffective to closed-down tanks, because most of the equipment requires night vision goggles, scanning through open hatches. Due to these limitations, the IDF has implemented a simple infantry/tank target designation drill, in which the terrain is divided into coordination

lines, with specific targets predesignated by codes. As the battle progresses, the infantry commander, normally using a rear-mounted external phone on the tank, communicates with the tank commander intercommunication, without the tank commander having to discard his harness.

Infantry/tank radio communications are severely degraded when short-range FM radios become screened by line-of-sight loss, as well as increased traffic volume, and enhanced by small tactical units parallel fighting, all operating simultaneously on different (but usually neighboring) frequencies, resulting in interference. Under such stringent combat conditions, special attention must be given to pre-mission briefings to avoid fratricide by means of combat identification and pre-designated terrain compartmentalization, preventing dangerous cross-movement.

A most vital, frequently lifesaving element is maintaining a constant and real-time situation awareness (SA). Thanks to new network systems, tank commanders can respond quickly against threats, especially sophisticated beam-riding antitank guided missiles (ATGM) fired from well-camouflaged and confined locations. Integrated combat intelligence by tactical unmanned aerial vehicles (TUAV), helicopters, and other means, such as Blue Force Tracking and Force XXI battle command, brigade and below (FBCB2), can become crucial support elements once sufficiently developed for tactical units.

Explosive reactive add-on panels may become extremely dangerous in the confines of urban combat; their outward explosion, as well as shrapnel debris, can cause severe casualties to accompanying infantry, so more effective modular armor suites are preferred.

Adapting Main Battle Tanks for Urban Combat

Survivability measures. Traditionally, modern tanks were designed for fast-moving, open terrain combat operations in which their mobility, firepower, and battle-

field survivability made them ideal weapons platforms for high-fire saturated decisive warfare operations. Unfortunately, due to its close-in lethality nature, the urban battlefield reduces these attributes virtually to nil, which makes the tank not only a prime target, but actually a highly vulnerable steel trap for its crew. Some of these limitations can be overcome by relatively simple modifications, enhancing survivability, and ensuring the vehicle is handled by a professionally experienced crew.

To improve restricted observation, panoramic optics are installed in the tank commander's position, from which he has an all-round observation arc. Other means are mast-mounted gimballed sensors with look-up/look-down capability. Installing observation cameras around the tank's hull in deadspace areas, especially vulnerable zones, is another cost-effective method. Such a system has been mounted on the Merkava Mk4, enabling the driver to reverse without external guidance.

No less critical is the tank's armored protection suite. Normally, the best protected part is a frontal arc, which is the most dangerous against high-velocity kinetic energy (KE) rounds in a tank-on-tank engagement. But in urban combat, highly lethal incoming threats are all-round, especially dangerous to vulnerable areas.

The IDF has modified an older version of Merkava Mk3 by up-arming it with a special all-round add-on suite, including a heavier bottom plate, named Batash (low intensive conflict ((LIC)) to fight against urban threats. The Batash version tank was fitted with marking poles, which assist the commander and driver in movement through narrow confines, such as refugee camp alleys, and minimizes damages to surrounding structures. To eliminate the chance of individuals planting explosive charges in the air intake, wire meshes were added to close such openings, as well as protecting optic sights. A

"The Trophy ADS system has three elements, which provide threat detection and tracking, launching, and intercept functions. The threat detection and warning subsystem consists of several sensors, including flat-panel radars, placed at strategic locations around the protected vehicle, to provide full hemispherical coverage. Once an incoming threat is detected, identified, and verified, the countermeasure assembly is opened and the countermeasure device is positioned in the direction where it can effectively intercept the threat."

redesigned commander's cupola was also installed, offering better all-round visibility at higher elevations. The external 0.5" machine gun, mounted on top of the main gun was linked to the fire control system and can now be fired by electrical actuation under armor. The IDF realized that the 0.5" is more useful in close-range, urban point target combat, than the main tank gun, which has problems traversing and causes severe collateral damage.

Another system demonstrated for the first time at LIC-2004 is a 360-degree omni-directional panoramic camera that can alert on any suspicious activity around the tank. The system uses patent pending omni-directional optics, providing continuous coverage of a 360-degree field of view without rotation mechanism, rendering the entire vehicle's crew with real-time awareness of the vehicle's surroundings and any potential dangers outside the vehicle.

The tank is also equipped with a video motion detector that can be programmed to selected areas of choice to provide real-time alerts. The system uses a high-resolution digital camera, mounted on a mast placed on the rear part of the upper turret. The system feeds the processed images to the computerized display installed inside the tank. A firing hatch and observation window was also opened in the rear compartment access door, where a sniper or crewmember can operate from a protected position against approaching killer teams.

Firepower. The tank's most powerful weapon is its main armament, the 120mm high-velocity (HV) gun; however, it is not

a very effective weapon for urban combat. Designed for a low-profile vehicle hull and turret, it has restricted elevation and depression angles, which makes the gun ineffective against targets in tall buildings or low cellars. Moreover, the high velocity gun has a long barrel, which restricts traverse in narrow streets, making it virtually impossible to engage targets to its rear once the barrel is pointed forward. These blind spots are the tanks most dangerous areas. As for ammunition, the prime armor-piercing fin-stabilized discarding sabot (APFSDS) and high-explosive antitank (HEAT) rounds are nearly worthless against short-range targets in urban terrain. Thus, a pre-mission restorage would be necessary, only if the tank would not fight in the open!

Special ammunition has been developed for urban combat. The IDF uses the 105-mm antipersonnel, antimaterial (APAM) multi-purpose (four-in-one) tank round. The round consists of a main body, which contains six submunitions with thousands of tungsten cubes for controlled fragmentation. It can also be fired as a unitary round to penetrate reinforced (double-bar concrete wall) and armored targets (other than main battle tanks). A 120mm APAM version for smooth bore barrels, mounted on the Merkava Mk3/4, is currently under development.

Tank-mounted machine guns, using the tank's excellent target acquisition capability, are far more effective against snipers in urban environments. Through the fire control system and optical (and thermal) sights, a .50-caliber machine, coax

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An Armored Task Force Approach

by Captain Jason Goodfriend and Captain David Levasseur

In the ever-changing world of modern conflict, there is not a more pressing organizational challenge facing the U.S. Army than the need for warfighting units to plan and execute civil-military operations (CMO), which has been dramatically illustrated in Operation Iraqi Freedom II. Over the past year, the “Steel Tigers” of Task Force 1st Battalion, 77th Armor (1-77 Armor), part of the 1st Infantry Division’s 2d Brigade Combat Team, took an innovative and modern approach to conducting battalion-sized CMO in Iraq. Through an intuitive and common-sense task organization, deliberate and objective-based planning, focused nonlethal targeting, aggressive execution, and trial and error, TF

1-77 conducted civil-military operations at the battalion level with proven success.

The Challenge

In May 2003, immediately following the suspension of major combat operations in Iraq, President George W. Bush succinctly described the CMO challenge facing the Army as, “We have difficult work to do in Iraq... We are helping to rebuild Iraq, where the dictator built palaces for himself, instead of hospitals and schools. And we will stand with the new leaders of Iraq as they



to Civil-Military Operations

establish a government of, by, and for the Iraqi people. The transition from dictatorship to democracy will take time, but it is worth every effort. Our coalition will stay until our work is done. Then we will leave, and we will leave behind a free Iraq.” This statement was a clear signal to U.S. Army units, who had just charged across Iraq in an amazing display of tactical warfighting proficiency, that the job was indeed not done. Those units were now to engage in activities entirely unique to those of U.S. warfare. The same soldiers who brought the regime of Saddam Hussein to its knees in a stunning and violent display of American military strength, were now to pick up the mantle of peace-

maker and take on the task of rebuilding a country in political and financial ruin, as they worked with a beleaguered people most Americans did not understand.

CMO is not a new concept for the U.S. Army; indeed, the Army has conducted different forms of CMO during conflicts from the end of World War II through to the Balkan operations, which continue today. However, CMO, particularly in Kosovo and Bosnia, have benefited from a heavy United Nations (UN), NATO, and nongovernment organization (NGO) influence. CMO in Iraq is new because U.S. Army combat maneuver elements bear





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the brunt of conducting CMO in country. With a still-stabilizing security situation and active combat operations taking place daily, there are very few NGOs in central Iraq, outside of Baghdad, as well as little on-the-ground support from the U.S. State Department and other government agencies beyond the provincial capitals. As a result, U.S. Army soldiers engage in daily support to civil government and reconstruction missions in a large majority of the country. For the modern combat unit in Iraq, CMO have become just as crucial to mission accomplishment and execution as traditional combat operations.

Unit CMO Organization and Roles

Early in preparation for deployment to Iraq, TF 1-77 realized that there were two operational legs to the mission at hand. The first was tactical operations, the daily combat operations conducted by the task force to ensure the safety and security of its area of operations (AO). The second was CMO, the daily reconstruction efforts conducted by task force soldiers in an effort to rebuild and stabilize the area.

Organization for the first leg followed traditional models. For the second leg, however, Task Force 1-77 Armor reorganized and created new positions to manage and execute CMO. In particular, the task force created a CMO section (S5) and an information operations (IO) cell from organic unit resources, and benefited from a U.S. Army Reserve civil affairs team (CAT) and a tactical psychological operations team (TPT), which was attached from division direct support resources. All of these resources provided increased flexibility to the maneuver commander. However, there was an inherent challenge in using these assets: they were not a normal part of the traditional task force organization. The attachments had not trained with the host unit and were not part of the division prior to deployment to the theater of operations. The roles and responsibilities of these assets had to be defined, as well as organized to fit the task force commander's overall vision and scheme of maneuver for operations in his AO.

TF 1-77 activated the S5 immediately following deployment notification. The S5 section was created in a manner that at least initially had a patchwork look — individuals were pulled from various companies and sections in the organic battalion and asked to quickly come together as a cohesive team. The S5 section was made up of two officers and two noncommissioned officers

(NCOs). The S5 officer in charge (OIC) was staffed with an officer from the task force, a junior non-career course captain who previously served as the battalion tactical intelligence officer. The S5 coordinated the task force CMO effort and designed the CMO operations strategy. He managed the overall civil reconstruction effort in sector, to include physical infrastructure reconstruction, as well as government system development and mentoring. He was also responsible for finding and delivering funding from a multitude of sources, both within the Army and from NGOs, to provide the fiscal force behind the massive reconstruction effort.

The assistant S5, a newly arrived armor branch second lieutenant, served as the project development officer (PDO). His vast responsibilities included: OIC of the civil-military operations center (CMOC); developing all civil projects from basic concepts provided by the S5, beginning with development/refinement through to completion; civil contract negotiations with local nationals; and tracking and paying for task force civil projects. A senior staff sergeant served as the operations sergeant with responsibilities ranging from task force movement coordination to CMOC logistics support. A sergeant served as administrative sergeant with responsibilities that included managing large amounts of collected information and developing databases and systems for tracking and reporting.

The S5 section was split into two sections due to the large scope of responsibilities in the AO. The operations branch, made up of the S5 officer in charge, the IO cell, and elements of the CAT, conducted long- and short-term CMO planning and daily missions with the task force companies. The project development branch, comprised of the assistant S5 and elements of the CAT, handled all contracting and civil project development and execution.

The IO cell within the operations branch of the S5 section was created from the task force fire support element (FSE). The fire support officer (FSO) assumed the additional role as the task force IO officer and was assisted by the task force targeting officer. The task force IO officer was a pre-command career course graduate captain, and the targeting officer was an E5 whose actual position was targeting NCO. The fire support officer conducted future IO planning, current operations synchronization, and target assessment. The IO officer also ensured appropriate resourcing for other members of the CMO team by working with the S3 to produce IO tasking in the daily fragmentary order (FRAGO). Additionally, the IO officer was responsible for all tasks normally associated with the traditional role of fire support officer in support of combat operations. The task force targeting officer conducted all IO duties for the FSO in his absence, and was responsible for submitting all reports to higher, as well

as assisting the FSO in planning and conducting kinetic fire support operations.

At the company level, the company FSO or fire support NCO (FSNCO) functioned as the IO officer. Again, due to personnel constraints, company fire support teams consisted of only the FSO/IO officer (lieutenant) and FSNCO/IO operator (E6). The role of the company IO was to serve as a conduit between the IO cell and the maneuver company. In this role, they provided IO support and advice to maneuver company commanders in the execution of IO targets, as well as provided feedback to the task force FSO on measures of effectiveness (MOE) of CMO/IO operations. Company FSOs also performed their traditional FSO roles in support of kinetic fire support operations.

The IO cell performed three functions for the task force IO fight. First, the IO cell participated in long-term operational planning in conjunction with the S5. This included developing key tasks to be accomplished in accordance with task force objectives and the commander's desired endstate. Second, the IO cell conducted current operations planning and synchronization between the task force, maneuver companies, and higher headquarters. The results of this function were specified tasks and talking points, which went into daily FRAGOs for execution by maneuver companies. This involved coordinating IO themes and messages for specific CMO and tactical operations, such as themes for major utility openings or talking points following a tactical raid. The third function was to provide feedback to the IO working group (IOWG), a group that convened biweekly to coordinate and evaluate the CMO/IO fight, which assisted in assessing MOE and refining both the short- and long-term IO and CMO plans.

Integrating External Assets

The increased focus on civil affairs led to traditional Army integration with Special Forces civil affairs and psychological operations units to assist conventional combat units in conducting these unconventional missions. This translated into integrating a civil affairs team A (CAT-A) and TPT into the maneuver task force of 1-77 Armor and the 1st Infantry Division. The teams were made up of soldiers from the U.S. Army Reserve or National Guard's direct support civil affairs and psychological operations battalion.

Task Force 1-77's CAT-A consisted of an officer and three attached soldiers. The CAT-A team, although reporting to its battalion of origin, worked directly for the task force commander and executed all missions according to the task force CMO strategy. The team worked with the S5 and was instrumental in both operational mission planning and execution, as well as civil project development. The specialized training and skills in conducting assessments in a variety of areas was vital to the overall operation. The team was primarily tasked by the S5 to conduct major population assessments

"Another task force asset — one specific to the Iraqi theater — was creating and using an Iraq Security Forces (ISF) liaison officer (LNO). This position was created to provide a direct link between the newly created Iraqi National Guard (ING), Iraq Police Service (IPS), and Task Force 1-77 Armor. The ING and IPS were not only distinct organizations, but had very different missions."

in critical areas such as education facilities, energy and water distribution, and telecommunications capabilities. These assessments were vitally important in establishing baseline determinations of what assistance would be required, and continued periodic assessment was crucial to determining MOE throughout the campaign. The CAT-A's work with the PDO was also important in tracking and ensuring quality assurance in managing over 100 civil projects throughout the task force's AO.

The TPT consisted of an NCOIC in the grade of either E5 or E6, and two soldiers. The TPT performed several vital roles for the task force. The team leader participated in the task force IOWG and assisted with planning, creating, and disseminating task force themes, messages, and talking points. The TPT was also responsible for obtaining products, such as fliers containing commanders' messages and themes, from higher headquarters and participating in distributing these products to company IO operators. If products were unavailable, the TPT was responsible for creating a product for the task force to use and submitting the product to higher headquarters for approval, production, and distribution. The TPT acted as the primary contact for all mass media outlets within the task force AO. They conducted thorough assessments of newspaper and radio outlets in the area and also acted as point of contact for communications with the task force. Finally, the TPT performed loudspeaker missions in support of kinetic operations and for disseminating talking points, conducting face-to-face interactions, and assessing the local population's attitudes to assist with further IO targeting.

Another task force asset — one specific to the Iraqi theater — was creating and using an Iraq Security Forces (ISF) liaison officer (LNO). This position was created to provide a direct link between the newly created Iraqi National Guard (ING), Iraq Police Service (IPS), and Task Force 1-77 Armor. The ING and IPS were not only distinct organizations, but had very different missions. The task of establishing the new security forces was an operation that called for close coordination between the task force S3 and S5 sections with the LNOs actually assigned to the S3 for operational use. The S3 was tasked with oversight on training and tactical operations, and the S5 was tasked with creating resources and infrastructure for the new forces. LNOs worked in dual roles as trainers and resourcers, with heavy assistance from the operations (S3), logistics (S4), and CMO (S5) sections.

Planning

Task Force 1-77 Armor's CMO strategy was to employ CMO and its effects as an additional "fire" that the commander could use to accomplish his desired result. The use of CMO was to be focused and deliberate to maximize effects and resources to pro-





“CMO engagement occurred by contacting and working with different spheres of influence (SOI) on each social level. Each social level had an associated SOI — political SOIs included city council members and mayors, tribal SOIs included sheiks and community leaders, and religious SOIs included Sunni and Shiite clerics and Imams.”

duce a desired endstate. The strategy had to be command supported at every level and was treated like an operational campaign plan, with the task force executive officer (XO) receiving multiple briefs prior to the task force commander’s decision brief and final approval of the concept. The task force used a combination of field artillery and intelligence techniques to develop an extremely detailed target and planning concept.

The process began with creating a CMO synchronization matrix, which was to be the one product that guided all CMO operations in the AO. It was the tool used to synchronize the kinetic combat and offensive operations with civil affairs and IO. The S5 began with a detailed examination of the brigade combat team’s (BCT’s) operational plan and order, and extrapolation of the BCT commander’s key tasks and desired endstate. He then researched current operations that were being conducted in country and resources that were available at the time. The S5, in conjunction with the task force and company IO operators, developed specific objectives that the task force would focus on for the 12-month operation. These four objectives were focused on areas where the task force could have realistic measurable effects. In the initial planning stage, the objectives were general topics with specific definitions so development would continue following the task force’s relief in place (RIP) and assumption of the AO. The objectives were also chosen to be relevant throughout the entire rotation, taking into consideration national policy and indicators of future operations over the course of the deployment. The chosen objectives were:

- Law enforcement — train and equip ING and IPS so they can execute specific missions and operate independently in sector and support U.S. operations.
- Civil management — civil utility functions are operating independently and basic civil services provided under the guidance of the local government.
- Civil governance — AO freely elected local governments properly organized and operating under approved guidelines within the new Iraq government constructs.
- Economic development — work with all institutions and individuals in providing support for economic development, agriculture production, distribution, and employment.

After defining the objectives, lines of operation were developed. Lines of operation are types of operations that were to be conducted throughout the entire rotation and the method by which each objective was approached. The lines of operation were con-

stant and uniform, each of the four objectives was approached through the following four lines of operation:

- Support to civil administration — the task force conducted direct support to the local civil authority by providing credibility to the government in the form of government mentorship, teaching, and development.
- Humanitarian assistance — the task force conducted humanitarian relief such as direct food supply and medical assistance.
- Military civil action — the task force worked with civil authorities, to include legislative council and government administrators, on multiple levels to provide fiscal and technical resources and support.
- Military-other agency cooperation — the task force worked with non-Army agencies to provide stop-gap measures and additional NGO resources to the area.

The next step in creating this planning product was to translate into action the BCT and task force commanders’ desired endstate, which is crucial because understanding the commander’s endstate and intent is the force behind multiechelon command synchronization and ensuring the task force is embedded in the BCT’s concept of operation. The desired endstate was improving civilian infrastructure within the task force’s AO.

The final piece in developing this plan of action was developing key tasks to be accomplished, by quarter, throughout the rotation. These tasks were specific “way points” of accomplishments that had to be met in specific time periods. They encompassed the entire task force operation, including not only civil affairs and IO tasks, but also company tasks. The IO officer and S5 began this development with key RIP tasks to be accomplished during hand-over of the AO from the departing unit. This first step was the key to understanding the AO, which was critical to further developing the synchronization matrix. Up to this point, the entire product was based on facts and assumption developed during mission analysis. It was only after having boots on the ground that a realistic and practicable plan could be further developed.

This “key tasks” product was an evolving document in matrix form, updated monthly through conferences between the IO officer and S5. As the task force’s priorities shifted, key tasks were redefined and adjusted, and the objectives were continuously evaluated to ensure CMO operations remained relevant. The key tasks matrix served as a map that defined civil operations in the area. This ensured operations remained focused, and commanders leveraged resources against proper targets.

Targeting

Task Force 1-77 Armor quickly determined that Iraqi society, at least in our AO, operates on three interwoven levels: political, tribal, and religious. This complex social stratification present-

ed challenges in targeting and execution, as the task force had to non-kinetically engage targets on all three levels. CMO engagement occurred by contacting and working with different spheres of influence (SOI) on each social level. Each social level had an associated SOI — political SOIs included city council members and mayors, tribal SOIs included sheiks and community leaders, and religious SOIs included Sunni and Shiite clerics and Imams.

These targets were different in many ways and each had different motivations and issues of concern. To effectively focus CMO assets, 1st Infantry Division and Task Force 1-77 Armor modified traditional artillery targeting techniques and executed the decide-detect-deliver-assess (D3A) target process for CMO targeting. The D3A process is familiar to the artillery community and has become common practice in the IO community to conduct IO targeting.

The IOWG was used to conduct all phases of the D3A process from initial target identification to current operations synchronization and target effects assessments. The IOWG was chaired by the task force XO, and attended by the task force IO officer, targeting officer, S5, TPT team leader, CAT-A team leader, and company IO operators. The IOWG would first evaluate possible “targets” in each company’s AO. These targets consisted of events, such as ground breakings and openings, or individuals, such as clerics or political figures, in each company’s AO.

Detection criteria addressed specific needs in the area that were consistent with task force objectives, such as water compact units, schools, or ING resources. The group then decided appropriate actions, such as directing IO or S5 engagement, company IO assessment, or TPT evaluation, to take on specific targets. The task force IO officer then published recommended talking points and themes to accompany most operations. These themes were nested, but modified, from higher headquarters’ themes. Company IO operators would then adapt recommended talking points particular to their AO. Finally, the IOWG would assess past operations and define MOE or the level of success for the operation. This process was used as an after-action review (AAR) for future operations, as well as a forum for company operators to inform task force planners of the actual impact and effectiveness of specific operations.

IOWG meetings were generally held biweekly, which allowed targets to mature and companies to gather information required for target assessment. During the intervening week, the task force IO officer and S5 met with the XO to ensure assets were synchronized, and to receive guidance for the upcoming week.

SOI Management and Execution

The SOI program served as the basic building block for interactions between members of the task force and the local population. Task Force 1-77 Armor managed and interacted with hundreds of SOI in the year-long operation. Developing SOI was largely a task for the IOWG and the task force IO officer. This group identified the role of each person with whom the task force needed to interact regularly and assigned an appropriate U.S. counterpart who was similar in age, responsibility level, and position. The task force then modified the resulting SOI matrix, recognizing that there was often a member of the task force who would habitually interact with an SOI, even though that SOI should have had a higher-ranking counterpart. For example, the city mayor was identified as the task force commander’s SOI; however, while conducting daily business, the S5 commonly interacted with the mayor to allow the task force commander freedom of maneuver and limit access to higher-ranking U.S. officials.

The S5’s primary engagements were with government officials and contractors concerning infrastructure projects. Promoting the establishment and legitimization of local government was a primary task in the support-to-civil-administration objective. Teaching a people basic democratic principles and the practical application of those principles was a constant and sometimes frustrating challenge. With the support of organizations, such as the Research Triangle Institute (RTI), the task force conducted workshops teaching practical democracy. It also assisted in developing government systems and institutions, such as project approval processes and standing committees. The NGO/task force partnership also taught legislative and administrative separation and cooperation, mediated disputes regarding district and local responsibilities, and constantly mentored local leaders. This was accomplished by constantly observing national level-policy, gauging local political winds of change, and monitoring the progress of the fledgling government. Common sense and practicality were most often the touchstones in assisting local leaders in establishing lasting and legitimate institutions.

The PDO and CAT-A engaged multiple SOI in the project development process. The PDO had daily interaction with contractors and government administrative officials to integrate all task force projects into the developing government system. He mentored officials in negotiating fair contracts, validated designs, and assisted in providing oversight for quality assurance and control. In their daily assessment duties, the CAT-A engaged government officials and private citizens, as well as connected government officials to outside resources and assisted in acquiring special expertise for specific projects that were outside the local populace’s technical knowledge. Through continuous engagements with SOI, the PDO and the CAT-A ensured continuous area development, and mentored a fledgling government.

The task force IO also had multiple SOI relationships that crossed traditional “SOI lanes.” The task force IO was used to engage media SOI to assist in the overall information campaign, and was also used at the task force commander’s discretion to assist in high-level engagements. This ability to “float” and “flex” across many SOI assisted the task force IO in developing talking points that were current and emphasized the commander’s key areas of interest.

Company IOs were used at the company commander’s discretion. They were most often employed as the company level CMO/IO operator. Receiving guidance and tasks at the IOWG and specified missions by their commanders, the company IO was most often the company commander’s voice throughout the AO. They were tasked with conducting direct impact local assessments, establishing preparation for ground breakings and media events, and conducting many daily local SOI engagements below the task-force level.

Talking-point development was a key task for the IOWG. These talking points were the “command message,” pushed during and after combat and non-kinetic operations, or themes that were to be pursued consistently with SOI for given periods. It was important to create well-thought-out talking points, tailored to specific topic areas to be engaged and individual targets to be executed. The task force IO took the BCT and division talking points and refined them for use in the task force’s AO. The IOWG would also add talking points based on upcoming operations, successes by task force elements or Iraqi Security Forces, and information concerning CMO projects to support the task force commander’s intent. These talking points would then be issued in a FRAGO to company IOs and would be further refined for platoon or individual patrols. All talking points were reviewed by the task force IO and XO before dissemination.



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Finding the Funding

In Iraq, there is no truer statement than “money talks.” As in traditional CMO environments, money had to be spent to gain influence and execute the CMO plan. Finding funds and accounting for expenditures was a complicated and ever-hanging task. Although the task force had a degree of financial freedom, division and brigade priorities had to be considered. Of course, these priorities were developed for application across a broad territory and did not always fit the needs of the task force-specific AO.

To effectively spend limited resources with maximum impact, the task force again focused its efforts on the four CMO objectives: law enforcement, civil utilities, civil management, and economic development, with a concentration on agricultural assistance.

One area the task force focused on was providing resources to the ING, particularly reliable, effective equipment such as bullet-proof vests and mission-specific equipment. In addition, we sought to outfit the IPS with police-specific equipment such as utility belts and checkpoint signs. The task force also engaged in a massive effort to properly quarter the newly created ISF by designing and constructing efficient command posts and hardened checkpoints.

Another primary focus was to assist the local government in establishing and improving basic utilities, such as fresh water production and distribution, as well as power generation and sanitation. The government’s ability to provide basic services reliably was instrumental in establishing government credibility. Like any bureaucracy, the local government needed physical structures and resources to become established. The task force therefore assisted in renovating — and in some cases building — government facilities. Additionally, the task force focused on economic development by creating jobs through building schools and supporting the agricultural industry, which was the predominant source of employment in the task force’s AO. Task Force 1-77 Armor spent approximately \$6 million on CMO activities in less than a year, completing over 70 projects and employing thousands of workers.

Brigade and division did not have enough resources to execute this ambitious effort and one of the S5’s most important duties was to seek additional funding from outside sources. This was accomplished by “recruiting” other U.S. Army units to sponsor Task Force 1-77 Armor’s projects. Inside the task force AO,

there was a massive logistics support area (LSA) that housed dozens of non-maneuver units that had money available for CMO, but no place to spend it. The S5 assisted in finding projects for this money. The outside units received favorable press and the comfort that they were making a difference in the area, and the task

force received greatly needed additional funding for key projects. Other government agencies and NGOs were also vital in assisting the task force with reconstruction efforts. The role of these agencies in providing additional funding and special expertise was invaluable to the overall effort.

The task force had to be frugal and vigilant with the funding it obtained. The S5 and PDO became “on-the-job” experts in building design and contract negotiations. The large volume of projects required grinding work by the PDO, who constantly made every effort to drive down artificial inflation and negotiate fair contracts for work and services received. He accomplished this by understanding fair market values for materials and services in the area.

End state

Through deliberate planning and some trial and error, Task Force 1-77 Armor had a positive impact on its small piece of Iraq beyond that of providing physical security. The soldiers who made up Task Force 1-77 Armor effected thousands of lives through their professionalism and dedication to a fight worth fighting. Sometimes rewarding, many times frustrating, and always dangerous, the soldiers helped give a people back their dignity and respect, while at the same time, conducting daily combat missions to rid a land of a constant threat.



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HOLDING GROUND



Echelon Defense in Open Terrain

by Lieutenant Colonel Bo Friesen

A regimental armored cavalry troop's unique structure makes it ideal for conducting reconnaissance and security missions. However, classic defense missions pose problems for such a unit. The lack of organic or attached infantry makes it difficult for a troop to hold ground or defend against an enemy advance. Fighting in open terrain increases the difficulty factor, as there are few terrain features to channel the enemy or construct defensive positions. The open, desert region of Iraq, where we have fought two of our most recent major conflicts, is exactly such terrain.

In a perfect world, a cavalry troop would receive a minimal number of defense missions, with infantry/armor company teams assuming them instead. In practice however, cavalry troops must often assume the less exotic, but vital, defense missions in an economy-of-force role. These missions also arise during independent reconnaissance or security operations. Cavalry troops must use superior firepower and maneuverability to compensate for lack of infantry. Maintaining weapons standoff and preventing enemy infantry from closing with the defending unit can overcome a lack of infantry support — an echelon defense can accomplish exactly that.

The following scenario illustrates simple, flexible tactics for conducting a hasty echelon defense. These tactics were refined by I Troop, 3d Squadron, 3d (3/3) Armored Cavalry Regiment (ACR) in Saudi Arabia during Operations Desert Shield/Storm.

The unit conducting this mission was a standard regimental armored cavalry troop of the early 1990s era. It consisted of two scout platoons, equipped with six M3A2 Bradley Fighting Vehicles; two tank platoons, equipped with four M1A1 Abrams tanks; two M106A2 armored personnel carriers, equipped with 4.2" mortar carriers; a fire support team vehicle (FISTV); and the troop commander's M1A1 Abrams (see Figure 1). The combat trains (not depicted in Figure 1) consisted of two M113A2 armored personnel carriers (first sergeant and maintenance), an M88 recovery vehicle, and an assortment of fuel/ammunition transports. One mortar carrier followed each scout platoon during offensive operations. The mortar section remained consolidated under fire support team (FIST) control during defensive operations.

General Situation

The enemy force in this scenario consists of an under-strength tank battalion

(30 tanks and nine mechanized infantry carriers). The troop commander realizes that he will not receive support because the troop is operating independently. He also knows that stopping the enemy is critical to the squadron's flank guard mission. He decides to make maximum use of his maneuverability and weapons stand off to attrit the enemy without sacrificing his unit. He will conduct an echelon defense.

The Tactics

The 1st platoon makes contact with the enemy force. It determines that the bulk of the enemy is in the platoon's sector. Therefore, 1st platoon will withdraw (see Figure 2), creating a troop left echelon. The 3d platoon reconnoiters to gain contact with the enemy while the mortar carriers consolidate with the FIST in a central location behind 1st platoon. The 1st platoon must draw the enemy force into an area where 3d platoon can engage it in the flank.

If the enemy wants a quick penetration, he will pursue 1st platoon, which he perceives as a weak spot. If he wants to attack, he will probably attempt a flanking maneuver. Either way, he will run into 2d platoon while 3d platoon fires into his flank. If the enemy tries to bypass on the

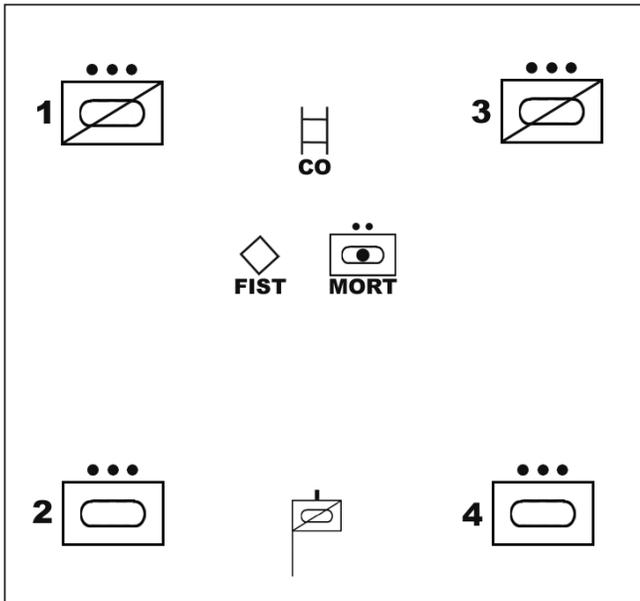


Figure 1. Initial Unit Configuration

left or outflank the troop, 4th platoon can shift to a position behind and to the left of 2d platoon (see Figure 3). The 3d platoon then moves to the reserve position in the center of the troop sector. The troop commander can repeat this shift of forces for as long as logistically feasible. This gives the enemy the impression that he is facing a much larger unit than is actually present.

If enemy forces decide to maneuver around the troop's right flank instead, the troop shifts to a right echelon. The platoon in reserve moves to the right (see Figure 4), assuming the bottom position in the new right echelon. The center platoon in the left echelon moves to the cen-

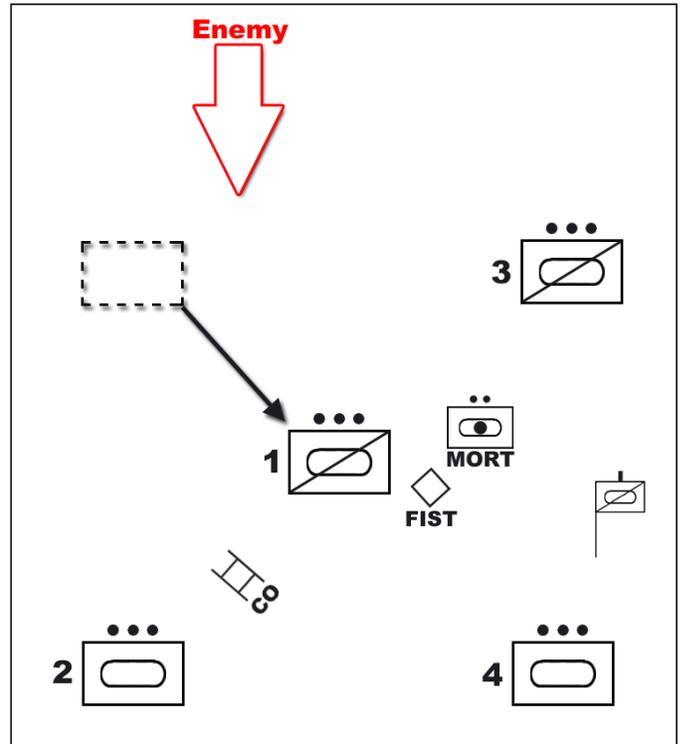


Figure 2. Troop Left Echelon

ter of the right echelon. The platoon at the bottom of the left echelon moves into the reserve position. The troop is now in a right echelon and can conduct the same shifting maneuver as described above in the left echelon.

Fire Support and Weapons Control

Since pre-plotted targets are not available, indirect fire will be difficult to call if the enemy force moves rapidly. The FIST must act quickly to bring fire to bear. Platoon leaders and vehicle com-

manders must be skilled in calling for fire to assist the FIST in getting inside the enemy's decision cycle.

The troop must make maximum use of its weapons stand-off capability. The platoons cannot become decisively engaged with the enemy or the echelon defense will collapse. Although this tactic appears complex at first glance, it becomes quite simple after a bit of practice. A well-trained unit can execute it with almost no radio traffic.



"Fighting in open terrain increases the difficulty factor, as there are few terrain features to channel the enemy or construct defensive positions. The open, desert region of Iraq, where we have fought two of our most recent major conflicts, is exactly such terrain."

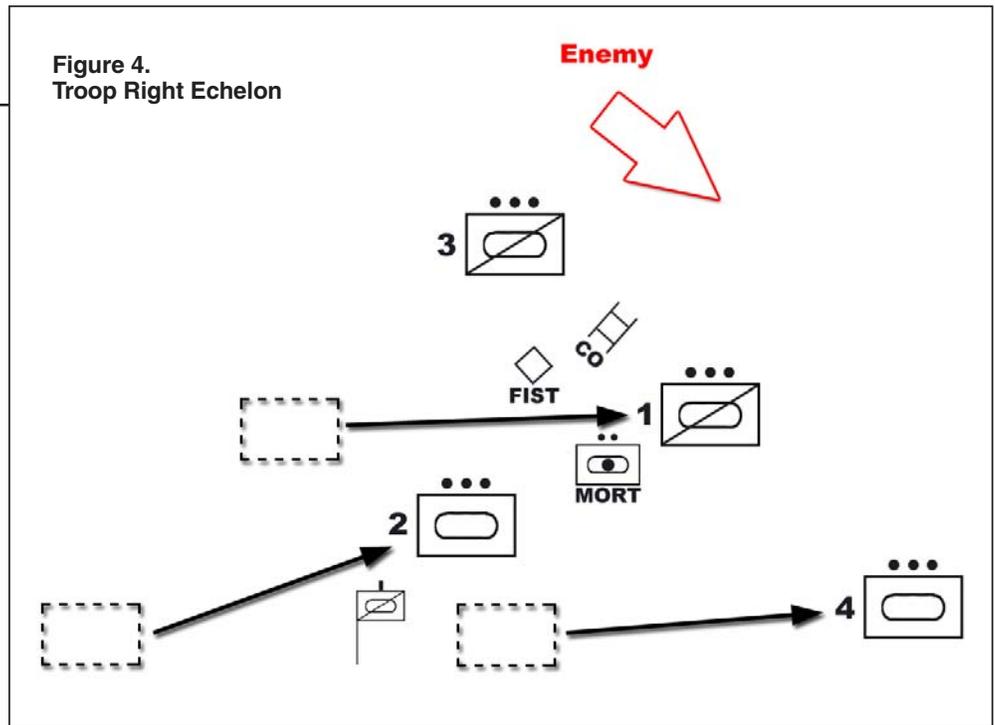
Once again, the above scenario depicts a unit at 100 percent strength, which is often not the case. The troop must maintain four maneuver platoons for this tactic. The troop commander may need to cross-level or add his vehicle to a platoon to achieve this. The flexibility gained by having a fourth (reserve) unit makes up for having smaller platoons.

Training

These tactics worked very well for I Troop, 3/3 ACR during Operation Desert Shield/Storm. They required only minimal practice before the troop achieved a proficient level of execution. Training followed the proven “crawl-walk-run” progression. Troop leaders conducted sand table exercises, followed by walk-throughs, with every vehicle commander participating and providing input. The final training phase consisted of several full-scale rehearsals. A continuous flow of input from all levels brought forth necessary changes to improve the tactics.

Coordination and communication are very important elements of these tactics. Rehearse them as often as possible, so

Figure 4.
Troop Right Echelon



every vehicle commander and scout instinctively knows where everyone else is or should be positioned. Once the troop can execute these tactics flawlessly, rehearse them at night in full chemical protective gear and with radio listening silence. Such practice greatly reduces the chance of fratricide and quickly alerts key leaders to possible problems in the mid-

dle of a training mission — while there is still time to make corrections.

The above scenario was used by a 1990s-era armored cavalry troop to illustrate tactical principles. However, an innovative combat company commander can tailor his unit to use these same tactics. While there are many additional defensive options from which a small unit commander can choose, a solid grasp of the echelon defense will enable the unit to fight and win open terrain defensive engagements. The teamwork and coordination developed through these tactics encourages vehicle commanders and platoon leaders to think in terms of higher-level missions, providing a strong foundation for more complex operations. Mastering the echelon defense will greatly enhance a unit's lethality.

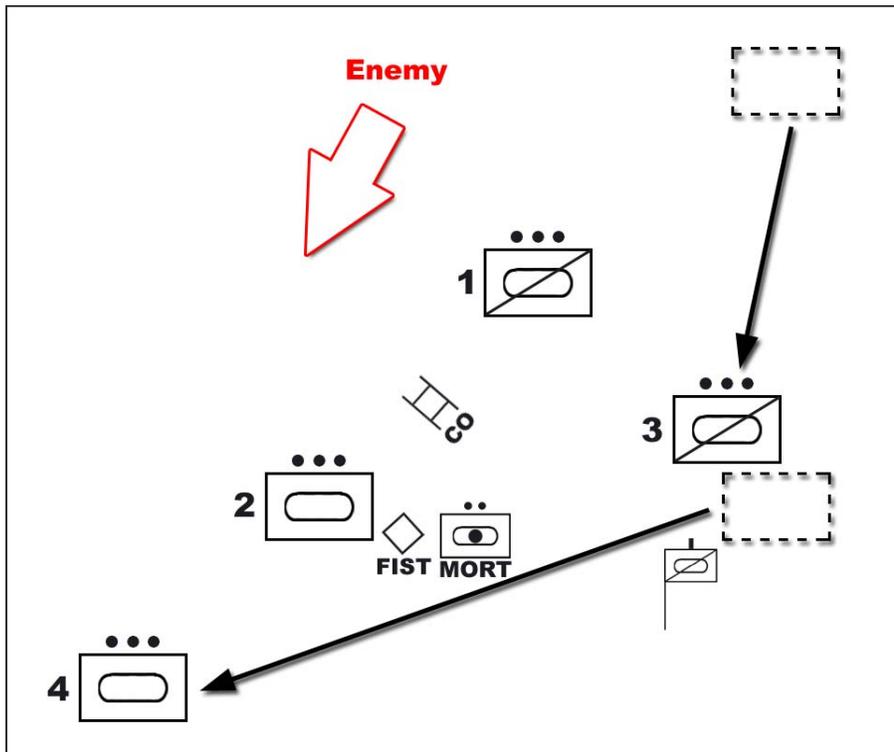


Figure 3. Extending Left Echelon



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Fault Trend Analysis: A Proactive Maintenance Approach

by Captain Walt Reed

Flexibility is one of the hallmarks of the cavalry organization. Cavalry leaders have to be comfortable with three basic operational and planning constraints: minimal planning and preparation time; widely varying mission sets; and complex logistics planning. Cavalry units are expected to maintain the ability to move around the battlespace with just enough information to get the job done, which often results in limited planning and preparation time. Cavalry units must also retain their ability to move out and accomplish the mission under various circumstances, which range from convoy security to direct action against known enemy positions. Finally, cavalry units are expected to be adept at developing detailed logistics plans — being “out front” entails a significantly more complex logistics set due to the long and tenuous line back to the rear area.

The case studies and analysis that follow are intended to assist cavalry leaders with detailed logistics planning and are based on the 1st Squadron, 14th (I-14) Cavalry's deployment to Iraq. The lessons learned from the three case studies below will assist leaders in developing a proactive maintenance approach. By taking the mission sets and the expected ter-

rain into consideration, leaders will be able to anticipate, in a general sense, maintenance faults and repair part needs and prepare accordingly.

The 1st Squadron (Reconnaissance, Surveillance, and Target Acquisition (RSTA)), 14th U.S. Cavalry (Warhorse), 3d Brigade, 2d Infantry Division, Fort Lewis, Washington, is the U.S. Army's first Stryker Brigade Combat Team (SBCT) and the only RSTA-capable squadron in the U.S. Army. It deployed to Operation Iraqi Freedom with 54 Strykers, which included 39 reconnaissance vehicles (RV), six mortar carrier vehicles (MCV), three fire support vehicles (FSV), four medical evacuation vehicles (MEV), and two command variants (CV). Each line troop had 13 reconnaissance vehicles, two MCVs, and one FSV, a total of 16 Strykers. Headquarters and Headquarters Troop consisted of two CV vehicles and four MEVs.

All Stryker variants have the same chassis, power train, steering components, and electrical systems. Each vehicle's hull varies slightly, as does its weapons systems. The categories used to analyze the fault trends include power train, steering, hull, electrical, heating and cooling systems, and fuel system. The power train category includes engine failures, trans-

mission, transfer case, suspension, and driveline. The steering category includes tires, hubs, and tie rods. The hull category includes damages to slat armor (a steel cage surrounding the vehicle to provide additional standoff), headlights, armor plating, and weapons systems. The electrical system encompasses all power generation and distribution, which includes batteries, wiring harnesses, generators, and communications equipment. The fuel system category covers fuel tanks, pumps, lines, and gauges. The heating and cooling category encompasses heaters, coolant lines, and water pumps.

To categorize and analyze data, all Strykers were treated equally. There are slight variations in the hull structure, weight, electrical systems, and weapons systems. However, they are extremely similar in the automotive sense and the variant differences do not seem to have a significant effect on maintenance status. Also, this study was not intended to determine the different maintenance requirements of each variant, but provide leaders with some broad-based lessons learned to assist in logistics and maintenance planning.

One particular maintenance aspect that has been emphasized is fault category numbers are more important than the actual

number of component failures. That is, if a Stryker requires three new tires at one time, that fault is recorded as one steering component failure, not three. Similarly, if a vehicle accident or enemy contact results in slat armor damage and some electrical damage, the maintenance fault is categorized as one hull fault and one electrical fault because the incident affected both categories.

Case 1: Convoy Security

During the months of April and May 2004, the Arrowhead Brigade Combat Team was tasked to provide convoy security for civilian and military convoys moving along Highway 1 from Convoy Support Center (CSC) Scania to Logistics Support Area (LSA) Anaconda and back down to the CSC — a distance of about 300 miles round-trip. Initially, an infantry battalion that was previously detached from the brigade undertook the mission, conducting a company-sized escort mission daily with one company escorting trucks south, one company escorting trucks north, and one company on maintenance and rest.

Toward the end of May, the brigade commander decided that the convoy security operation was more of a cavalry mission; he decided to bring the infantry battalion north to Mosul and send the 1-14th Cavalry to assume convoy security responsibilities.

The mission sets did not change once the cavalry assumed control of the operation. Each troop would make one trip daily for two consecutive days, and then have one rest and recovery day. One troop would move south from LSA Anaconda to CSC Scania, one troop would move north from CSC Scania to LSA Anaconda, and one troop would be on rest and maintenance.

The terrain that the troopers had to negotiate along Highway 1 and associated bypasses included both improved and semi-improved roads and heavily congested urban areas. As the enemy situa-

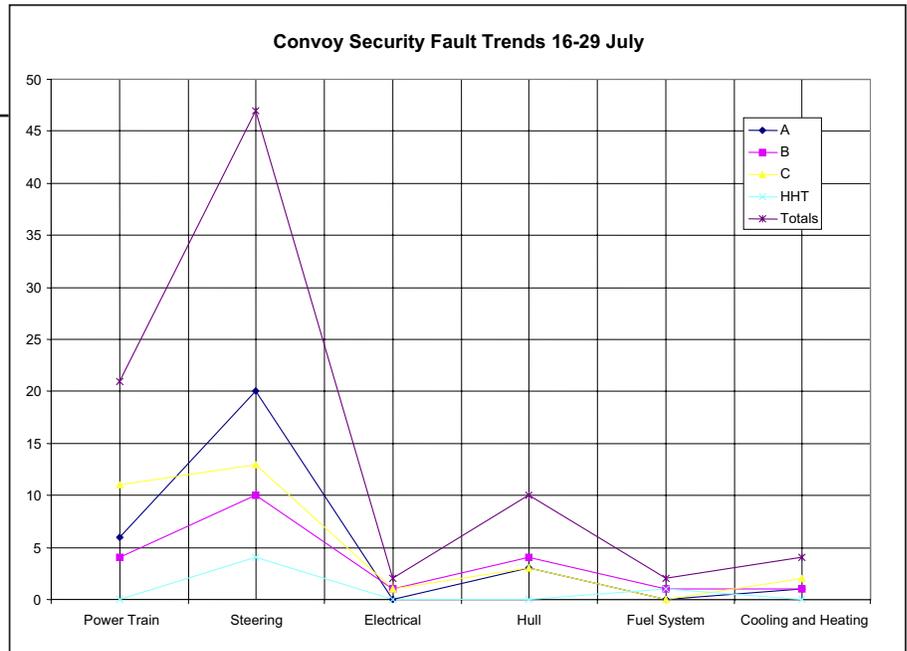


Figure 1

tion dictated, the units used both sides of the highway, the median, and frontage roads to continue convoy movements. The heavily congested urban areas were located mainly in and around Baghdad; however, driving was mostly done along improved or semi-improved roads and through moderate to light urban congestion.

A quick glance at overall trends suggests the lion's share of maintenance faults were with steering components. Incidentally, almost 80 percent of those faults were tires. Tires have been the number one in-demand item for the Stryker vehicle, but should come as no surprise to anyone. Mission factors that influenced this trend include the distance each vehi-

cle traveled in the 14-day period (almost 2,000 miles), the surface conditions of Highway 1, and the many local bypasses the convoys were forced to travel. Also, convoy speed and travel distances exacerbated slight alignment problems and contributed to steering component failures.

The second highest fault trend in the study was in the hull category. Mission factors that influenced this include high volumes of traffic in urban areas through which convoys traveled and the fact that no coherent traffic laws are enforced. Installing the slat armor increased the Stryker's width, which made motor vehicle accidents a significant amplifier to the overall category of hull failures.

"To categorize and analyze data, all Strykers were treated equally. There are slight variations in the hull structure, weight, electrical systems, and weapons systems. However, they are extremely similar in the automotive sense and the variant differences do not seem to have a significant effect on maintenance status."





“The conditions in early August are extremely dry, hot, and dusty, as in most of Iraq. Vehicle travel along the roads kicks up a tremendous amount of dust and sand, and temperatures often exceed 115 degrees. Although travel along the border was done at decreased speeds compared to the convoy security mission, the engine and power train were under increased stress due to off-road and undulating terrain conditions.”

Case 2: Reconnaissance Operations in the Vicinity of Iraq/Syria Border

During its sixth week of conducting convoy security operations through Baghdad, the squadron received a warning order to prepare to deploy in less than 72 hours along the Syrian border. The mission was to conduct reconnaissance and security operations as part of a larger multinational force — Iraq’s initiative to stem the flow of terrorists across porous borders. The mission required the squadron to deploy en masse along hundreds of miles of

border and focus all intelligence, surveillance, and reconnaissance assets toward shutting down infiltration routes into Iraq from Syria. In support of the interdiction mission, Warhorse troopers conducted joint border patrol missions with the Iraqi border police, border fort occupation and improvement, and long-range reconnaissance of suspected infiltration routes.

The terrain along the Syrian border is made up of rolling, dusty desert plains, cross-cut by wadis and unimproved roads. The conditions in early August are ex-

tremely dry, hot, and dusty, as in most of Iraq. Vehicle travel along the roads kicks up a tremendous amount of dust and sand, and temperatures often exceed 115 degrees. Although travel along the border was done at decreased speeds compared to the convoy security mission, the engine and power train were under increased stress due to off-road and undulating terrain conditions.

During the first 14 days of Syrian border reconnaissance operations, the fault trend changed to indicate a significant increase in the amount of power train failures and a decrease in the aggregate amount of steering component failures. Although steering component failures remained a large source of the overall maintenance faults, power train components took the overall lead when conducting reconnaissance operations along the border. Unimproved roads and varying degrees of desert berms, wadis, and dry lake beds appear to have contributed to failures in driveline components, such as east/west shafts and wheel assemblies (hubs).

Another interesting development was a sharp comparative increase in cooling and heating systems failures. High temperatures and the need for troops to operate vehicles in the heat of the day seem to have caused failures on items, such as water pumps, water pump belts, thermostats, and coolant lines.

During the first 14 days on the Syrian border, there was also a spike in electrical faults during reconnaissance missions. This is possibly due to vehicles being run almost continuously to support the power needs of communications systems and the long-range advanced scout surveillance system (LRAS3).

Case 3: Security Operations in Western Mosul

Almost exactly two weeks after the mission along the Syrian border began, Warhorse received orders to deploy to Mosul to a conduct relief-in-place with an infantry battalion currently conducting security operations on the west side of the Tigris River. The squadron was given less than 12 hours to close on Mosul and begin relief-in-place activities. One Warhorse troop was task organized to an infantry battalion remaining in Western Ninevah Province, and Warhorse picked up a rifle company once it closed in on Mosul. The squadron’s mission was to conduct security operations in and around Mosul to maintain a stable and secure environment and facilitate the continued development of the local government and security forces. Troop level tactical operations consisted of counter-mortar pa-

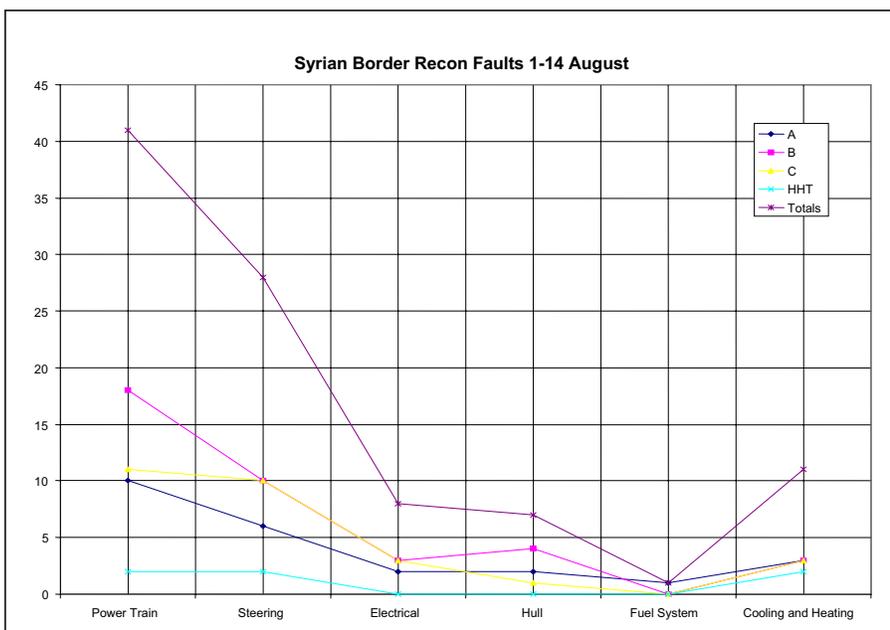


Figure 2

trols through the city, flash traffic control points, joint patrols, and offensive operations to capture or kill known terrorists.

Mosul is home to approximately 1.7 million people, most of whom live concentrated on the western side of the Tigris and within the squadron's area of operations. Naturally, almost all of the terrain inside the area of operations is heavily restricted urban sprawl. Most of the patrols used smaller side roads and byways to travel to and occupy observation posts, while high-speed travel was restricted to a few highways cross-cutting the city. Given the lack of enforced traffic laws or a functioning police force, most of the traffic, whether on small streets or the few highways, was stop and go.

Fault trends observed during the first two weeks of western Mosul security operations revealed a similarity to those observed during convoy security missions, only on a smaller scale. This was evident by reemerging steering component failures as a main source of non-mission capable faults in each troop. Hull failures rose significantly compared to the border reconnaissance mission, commensurate with the rise in traffic accidents and enemy contact while conducting operations in the urban environment. Also, heating and cooling problems dropped significantly with none observed among the three troops because many of the patrols were short-duration operations and were conducted during limited visibility hours.

Analysis

Comparing the three case studies yields two fairly obvious conclusions. First, the differing mission sets have a significant effect on the type of maintenance faults observed. The influence of mission factors cannot be overstated; mission requirements affect everything from the time of day the vehicle is consistently operated to how long and how well an operator conducts preventive maintenance checks and services.

While conducting security missions, most faults were in the steering component category, whether the security mission required a 150-mile escort on a main highway, or a short drive to a blocking position for cordon and search. Security operations, whether convoy security or area security, required a different type of vehicle usage than reconnaissance operations and therefore more steering components were affected.

Conversely, during reconnaissance missions, the majority of failures occurred in the power train components with a spike in heating, cooling, and electrical com-

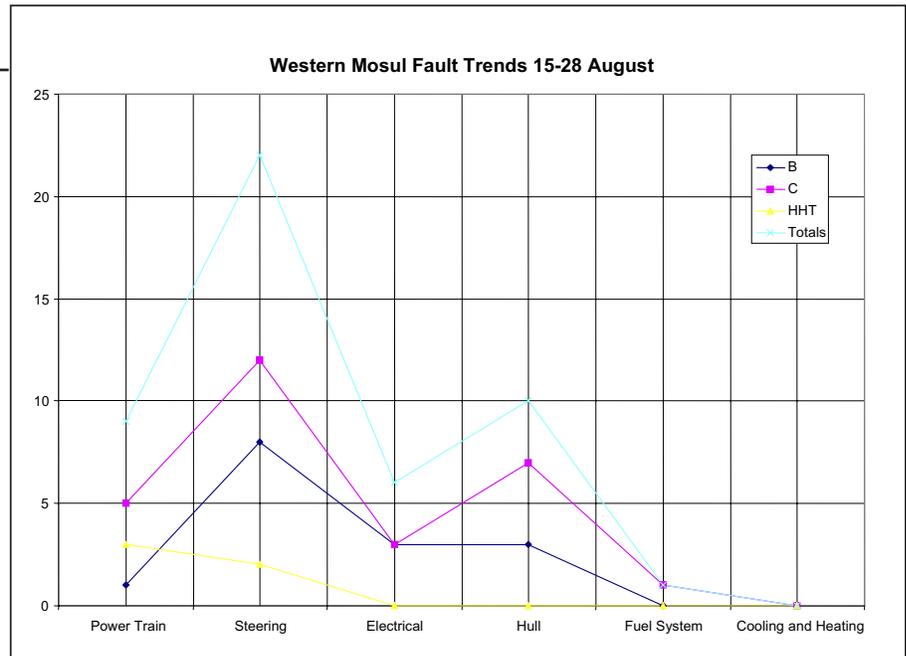


Figure 3

ponents. The increase in the amount of heating, cooling, and electrical faults resulted from long periods of engine idling and a constant drain on electrical systems, which are requirements placed on the vehicle during reconnaissance operations.

The study also revealed that the increase in power train faults was caused by the terrain along the Syrian border. Terrain, although not the most important factor, has an impact. The terrain along the Syrian border appears to have affected the ability of drive train components to stand up to dusty off-road conditions. Even though the distances traveled were almost one-quarter of the distances traveled during security missions, the power train components failed at a significantly higher rate during Syrian border reconnaissance missions. In short, vehicles were driven less and at slower speeds, but power train components failed at higher rates.

The notion that different terrain and mission sets affect equipment failure differently is by no means novel; however, fault data shows that there is a real connection, which indicates the need for cavalry leaders to develop a proactive maintenance posture. The examples used in this article are not the only mission factor-maintenance fault relationships experienced in Iraq. Many other factors influenced the data, but were not discussed because those factors did not have the same value as lessons for advancing the notion of a proactive-maintenance approach.

Too often, leaders conducting maintenance and logistics planning rely on prescribed load lists or additional stock listings to manage maintenance require-

ments. While these lists have to be maintained and adhered to, cavalry leaders need to be proactive in generating and filling logistics requirements through careful analysis of fault trends and resulting underlying conditions. For example, armed with the knowledge of the tangible connection between security operations and an increase in steering component failures, a unit S4 can anticipate requirements and requisition twice the standard amount of tires. Likewise, during a reconnaissance mission, leaders can expect to see a spike in electrical and cooling systems failures and plan accordingly by preparing operators with additional tips on keeping systems cool and ensuring mechanics know how to troubleshoot electrical systems. These are only a few examples of a proactive maintenance and logistics planning, and the connections demonstrated here will not always hold true; however, careful fault trend analysis and the resulting proactive maintenance approach can be an extremely useful tool for successful cavalry leaders.



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Peace in Galilee: Long-Forgotten Lessons

by Eric Chevreuil

Baghdad fell a long time ago in the learning curve of counterinsurgency, and it appears we still have not learned enough from our casualty count, nor have we from recent history, and we all know those who do not learn from history are condemned to repeat it.

Iraq: 2005

Roadside bombs (RSB) and rocket-propelled grenade (RPG) attacks in Iraq quickly became the main threat to drivers of lone patrols and support personnel traveling with daily supply convoys throughout the country, but mainly around or inside the capital. Initially, the casualty rate in stricken vehicles was 99 percent; however, the lethality of ambushes was officially lowered to 25 percent due to the use of armor kits for vehicles, air reconnaissance, portable jamming devices, computer mapping of favored locations, and sniper teams on search-and-destroy missions. At home, despite a meticulous casualty count kept by the media, the daily victims of RSB attacks are no longer even making front-page news. The war is far

away and these tragedies have become routine events.

Berlin: April 1945

Russian forces massed an impressive armada around the capital of the Reich for the final blow, the final revenge. It is said that the battle of Berlin saw the highest concentration of artillery reached in any war. Rapidly, Russian shells leveled the city, one block at a time, quickly followed by ground forces that exploited the destruction with massive infantry and armored forces. No mercy, no concern for “collateral damage,” and no other rule of engagement than “make the Nazis pay!” The U.S. forces were stopped on the western banks of the Elbe River as per a previous treaty with the Russians. The last German fighters knew that there was no alternative but to fight until the bitter end. From the rubles of the dying city, old Volksturm and Hitler Jugends, teamed with professional soldiers, would come out of their holes once the shelling stopped to ambush the T34 main battle tanks with volleys of Panzerfaust, the first

RPG ever. Russian tankers paid a heavy price to conquer the city (2,000 tanks destroyed), but they also learned fast, and some tankers ended up welding metallic bed frames on their tanks to detonate the shaped charge before it hit their armor.

Iraq: 2005

In Iraq, the military reacted and some vehicles were indeed upgraded, while our troops were scavenging landfills to find scrap metal capable of improving the protection of other soft-skinned vehicles. The brand new Strykers were equipped with a birdcage-type anti-RPG protection, or were outfitted with a heavy package of extra armor added to their hulls.

Here we are again, reinventing the wheel in the never-ending battle between armor and bullets. The new extra armor ends up limiting the Stryker’s mobility, while canceling its very reason to exist: air mobility. About 28-inches wider and 7,000 pounds heavier, Strykers must now run on over-inflated tires (90psi), which, according to many open sources, prohibits the use of the central tire inflation system



(CTIS), thus preventing the vehicle from going over soft surfaces. Furthermore, with the extra weight, the winch capabilities are exceeded and the Stryker is dependent on other recovery means. Call it progress! Call it lessons learned!

Chechnya: Grozny 1994-1995

During the Chechen conflict against Russian mechanized forces, it appears that IED use was infrequent, with the exception of homemade chemical mines (chlorine) that were remote-control detonated. The bulk of anti-vehicle weaponry was provided by the old RPG 7 and the newer RPG 18, which were used in Grozny and proven to be effective against every single Russian armored vehicle, T80 included, when massively fired from above. The Russians had to quickly bring back past proven technologies, to include wire mesh cages that were first implemented by Russian tankers in Berlin in 1945, and “reshetka” steel-bar screens that were added to Russian armor in Afghanistan.

Russian forces also discovered that armored tracked combat engineer vehicles were ideal for removing obstacles. They also rediscovered an Afghan problem — the vulnerability of their trucks, crew, and human cargo to snipers, anti-tank weapons, and land-mine blasts. Armored cabins were needed and an extra blast protection was necessary to put an end to catastrophic losses. Armored Ural trucks had previously been built and fielded in Afghanistan, but were not in sufficient numbers for Chechnya, which prompted Russian commanders to find armored packages to fix the problem.

Iraq: 2005

Bosnia demonstrated the need for an armored version of the high-mobility, multipurpose, wheeled vehicle (HMMWV) at the head of convoys, which brought on the production of a 2,000-pound overweight series in the late nineties. Operations in Iraq highlighted the need to improve the protection of regular HMMWVs, and an armor survivability kit (ASK) was developed to “up-armor” vehicles and increase crew protection against RPG and IED attacks. Still yet, powerful RSBs and other remote-controlled IEDs claim the lives and limbs of soldiers riding unprotected or in inadequate vehicles.

Operation Peace in Galilee: 1982

The extensive use of cheap RPG 7s and IEDs by Arafat’s Palestinian Liberation



“In Iraq, the military reacted and some vehicles were indeed upgraded, while our troops were scavenging landfills to find scrap metal capable of improving the protection of other soft-skinned vehicles. The brand new Strykers were equipped with a birdcage-type anti-RPG protection, or were outfitted with a heavy package of extra armor added to their hulls.”

Organization (PLO) ended up costing the Israeli armored force dearly. The U.S.-made M113 was an easy target at close range in urban areas and its aluminum armor had a tendency to burn. Rapidly, they were removed from contact lines and limited to ferrying cargo to fighting units (until they were fitted with reactive armor in the mid-1990s). The heavily armored Merkava main battle tank, thanks to its rear compartment, took over and replaced the thin-skinned armored personnel carrier (APC) to take troops and ammunition to the front and evacuate wounded. Finally, the counterinsurgency armored vehicles NagmaSho’t and Nagmachon entered the battlefield and took over until the arrival of the 44-ton APC Achzerit in 1990.

Israel: 1980

Israel is a U.S. ally and has been a permanent warfare laboratory since 1948, and as far as adapting and improving armored equipment goes, they have done it all — everything from cannibalization to retrofitting. Early in the 1980s, stuck with extra running hulls of the vintage British Centurion tank and faced with increasing losses due to RPG attacks in Beirut, the Israeli Defense Forces (IDF) decided to build a better protected APC to add to its inventories of the light-armored M113 and half tracks — the concept of a low-conflict APC was born.

Quickly, the Centurion-based APC and NagmaSho’t were switched from the infantry to the engineers because of design flaws that exposed disembarking troops. However, the concept was not abandoned

and after extensive trials, a new T55-based heavily armored APC was developed to accompany Merkava tanks to combat, while providing troops with what was claimed to be the best protection in the world — the 44-ton Achzerit APC with main battle tank grade armor.

In the meantime, the NagmaSho’t rendered many services to the IDF in its combat engineer role that the original personnel carrier design was improved (reactive armor). New variations were designed to adapt to a much-needed counterinsurgency role, which included higher sides; fighting compartment; heavy side track; extra belly armor; reactive and passive armor; higher and thicker fixed pillbox-like structure; fittings for each type of engineer equipment, such as blade, anti-mine rolls, and plows; grenade launcher; optical devices; and machine guns. The final product, the Nagmachon, turret excluded, totaled 45-tons of steel, an amazing weight for an APC, especially compared to the 20-ton Stryker and the 23-ton Bradley!

From the mid-80s to today, the Nagmachon saw extensive action in Lebanon and in the “occupied territories” of Palestine and is still used for missions in hostile urban areas not suitable for traditional APCs, such as open roads, leading convoys, delivering infantry and goods in unsecured urban areas, and accompanying armored bulldozers.

In the early 1990s, a 55-ton low-conflict APC was added to the arsenal, mixing components of the old Centurion to newer Merkava-derived technologies, adopt-

ing passive and reactive second-generation armor, a superior frontal, belly, and lateral protection, and a crew of twelve. The Nakpadon is the latest and most powerful armored vehicle the IDF has ever designed for counterinsurgency.

With the Nagmachon and Nakpadon, dedicated to counterinsurgency, a newer combat engineer vehicle was also needed to maximize the NagmaSho't success story and deliver engineers to places that lesser armored carriers could not go: the 50-ton Puma was designed with that major purpose in mind — clearing paths through heavily defended areas.

It took basically ten years for Israel to fine-tune these low-conflict APCs dedicated to counterinsurgency in built-up areas, ten years that started with the quick-fix NagmaSho't and ended up with the almost-perfect Nakpadon and Puma. Furthermore, first-hand intelligence from Beirut in 1994 also mentioned a brand-new electronic warfare capability that was being tested for these armored vehicles, which would allow them to jam or override cell phone and remote-control frequencies and detonate roadside bombs.

Roadside bombs are crude by design. They are usually made up of mixed explosive sources, such as unexploded shells, black powder, TNT, and C4, arranged in two basic groups, depending on the insurgent's skills and the anticipated result. It can simply be a large quantity of assorted explosives designed to achieve a huge car bomb-like blast effect that would overturn or crush light vehi-

cles. It can also be a more sophisticated arrangement of explosives set in a gun-like concrete pipe to achieve a controlled explosion and a directional blast toward the target area. Usually, the explosives are complete with primitive projectiles composed of shrapnel, nails, bolts, and glass to achieve a higher degree of lethality and penetration. Detonation of the device is mostly remote, thanks to cheap and available technologies, such as cell phone, pager, toy remote controls, garage door openers, two-way radios, and remote door bells, but traditional methods, such as pressure plate, wire, and manual detonation, can still be employed. According to *globalsecurity.org*, as of 2003, up to 60 percent of attacks on U.S. forces begin with the detonation of an IED.

The unique Israeli armored concept was designed based on lessons learned the hard way — fighting counterinsurgency battles in hostile urban areas against a stealthy and lethal guerrilla force, a feat that Mao would be proud of. If Israel has been a warfare laboratory since 1948, Beirut is the ultimate academy for urban warfare, insurgency and counterinsurgency operations, and booby trapping. RPGs and RSBs were of course not born there, and the way they were successfully used against a modern mechanized invading force that stuck to main avenues and checkpoints, was just traditional. The IDF merely had to learn again a lesson written in many history books!

What was born in Lebanon was a main battle tank-grade APC designed to pro-

vide maximum protection for its crew and embarked infantry from belly mines, RSB effects, and close-quarter RPG attacks. This explains why these heavy monsters landed the mission to open the road to regular APCs or infantry fighting vehicles. Furthermore, their capability to directly or remotely detonate IEDs and sustain the blast with no or little damage contributed to their success.

Iraq: 2005

Lessons learned by the Russians in Berlin (or Chechnya for that matter) were shelved; Operation Peace in Galilee was long forgotten when U.S. forces entered Iraq. The year is 2005, and we face the same threats many armies before us faced, and we learn from them as days go by and casualties increase, rewriting in blood the next manual on mechanized counterinsurgency operations in hostile urban areas.

Can we afford to wait ten more years to come up with solutions that have already been invented and implemented? Some say that all conflicts are different, that warfare differs with time, and that history is for historians. Well, Mao quoted Napoleon's retreat from Russia in the "manual" on guerrilla warfare he wrote when rural China was fighting a modern Japanese army. His manual did not age at all, according to today's guerrilla warfare standards!

The U.S. military has the heavy metal — armored vehicles that could be used as a base for an Israeli-like machine. We have the electronic warfare (EW) technology to monitor, jam, record, or locate cell phone transmissions and are already using such portable devices in Iraq, along with the EW capability to jam or "ping" remote-controlled frequencies. The U.S. military also has the technology to make better armor and protect wheeled vehicles, which is slowly being done. How-

"Bosnia demonstrated the need for an armored version of the high-mobility, multipurpose, wheeled vehicle (HMMWV) at the head of convoys, which brought on the production of a 2,000-pound overweight series in the late nineties. Operations in Iraq highlighted the need to improve the protection of regular HMMWVs, and an armor survivability kit (ASK) was developed to "up-armor" vehicles and increase crew protection against RPG and IED attacks."





"The two Iraq invasions have proven that the M1 is a strong workhorse and has survived RPG attacks. Replacing its turret with an observation and control "pill box," adding extra belly, front, rear, and side armor, and thicker side plates should not be a challenge. Building in the optical and electronics necessary for leading convoys and clearing roads should also be easy."

ever, insurgents manage to stay ahead of the game, and as long U.S. forces only document and react, they will still stay behind and suffer casualties.

It is time to develop a heavy urban counterinsurgency weapons system based on an M1 Abrams chassis, equipped with a combination of engineer add-ons and EW systems. The two Iraq invasions have proven that the M1 is a strong workhorse and has survived RPG attacks. Replacing its turret with an observation and control "pill box," adding extra belly, front, rear, and side armor, and thicker side plates should not be a challenge. Building in the optical and electronics necessary for leading convoys and clearing roads should also be easy. Fitting it with a mortar to fire breaching charges, missile and grenade launchers, and .50-caliber machine gun would also be wise.

The real question is to know if there is a place for such a vehicle in the U.S. military's inventory, a current and future need that would justify rushing a first draft to the battlefield. Would it be wise to patch a tank and test it in Iraq; or would it be wiser to "borrow" a couple of Israeli Nakpadon or Puma, fit them with onboard high-tech EW devices and test the concept? Both are awesome battlefield-tested machines born after ten years of experimentation and tested by fire in a conflict that is very similar to the one in Iraq.

American forces were lacking a good nuclear, biological, and chemical detection vehicle before the first Gulf War offensive, and they bought the Fuchs, a German-made wheeled vehicle, to fill the position.

The second Gulf War showed the need for an armored vehicle fast enough to lead wheeled convoys; strong enough to survive traditional mine blasts, IEDs, and direct rocket attacks; versatile enough to allow forcible road opening and detonate (or prevent detonation of) IEDs, based on an EW capability; ergonomic enough to safely accommodate embarked infantry; armed and equipped enough to breach road blocks and detect and destroy snipers; and finally, versatile enough to accommodate a whole range of specific engineer tools such as blades, plows, rolls, and cranes.

Unfortunately, once again, one has only to follow the money, or lack thereof, to understand why troops are poised to relearn and reimplement already well-known and documented solutions. A peacetime army never receives funding to develop specialized weapons systems required to cover all scopes of military warfare! Urban combat and counterinsurgency operations are highly specialized tasks and require highly specialized training and equipment that the United States cannot afford on a just-in-case basis. Between wars, armies

of western democracies take budget cuts that prohibit developing highly specialized equipment and training that go beyond basic tactical and technical skills. However, when a crisis arises and the decision to go to war is made, everybody is up in arms, wondering why vehicles are not armored and why troops are not well prepared for such a contingency.

In the meantime, while the old men talk, young men die. Maybe war is something too important to be left to the military, but maybe decisions affecting the art of war are far too important to be left to civilians.



Captain Eric Chevreur is currently retired from the French army after 18 years of service as an armor officer and is employed as a network administrator for Spectrum Environmental, Folsom, CA. He received a bachelor's degree from the University of Nancy, France. He received his military education from several French academies, to include St. Maixent NCO Academy; St. Cyr-Coetquidan Officer Academy; Language and Intelligence Academy Strasbourg; and Staff College Compiègne. He served in various command and staff positions, to include tank platoon commander, tank platoon executive officer, G2 reinforcement, and military English teacher, multimedia language course developer and head of the British and North American Language Studies Department, Strasbourg.



From the Ashes: Rebuilding the Iraqi Army

by Major Mike Sullivan

When you hear the term “observer controller (OC),” it brings to mind images of non-MILES wearing, doctrine-spouting, mistake-hunting experts who are the bane of units going through Combat Training Centers. They are also considered to be safe from deployments, other than the occasional temporary duty trip. However, on 16 March 2004, members of the Timberwolf OC team from the Combat Maneuver Training Center (CMTC), Hohenfels, Germany, arrived in Baghdad, Iraq, with a new mission: to train a battalion of the new Iraqi army. Suddenly, those doctrinal experts would have to practice what they preach.

The CMTC sent two ten-man teams to support the Coalition Military Assistance Training Team (CMATT). A mix of armor and infantry backgrounds, each team was made up of several OCs, which included one field grade officer, two captains, and seven senior noncommissioned officers (NCOs). The Timberwolf team was the first to hit the ground, with the

mission of training the Iraqi 6th Infantry Battalion. Two weeks later, another team from the CMTC, the Grizzlies, arrived to train the Iraqi 7th Battalion.

As with so many units entering Iraq, there was the initial confusion, apprehension, and frustrations normally involved with a deployment. It took approximately two weeks travel time to arrive at our training base in Kirkush, Iraq. Located in the U.S. Army’s 1st Infantry Division’s (1ID’s) sector, Kirkush lies between the towns of Balad Ruz and Mandalay. The Iranian mountains are clearly visible to the east. Kirkush Military Training Base (KMTB) was residence to the 30th Enhanced Separate Brigade (Forward Operating Base Caldwell), a North Carolina Army National Guard unit assigned to 1ID, and the Iraqi army training area. All CMATT activities, courses, and infantry battalions are located on the Iraqi portion of KMTB. All courses for the Iraqi army, ranging from primary leadership development courses to senior NCO courses, are

conducted at KMTB. Currently, control of the courses is gradually being handed over from a joint team of U.S. military instructors to Iraqi instructors, a sure sign of the Iraqi army starting to train their own.

Three Iraqi battalions, 5th, 6th, and 7th, were stood up in KMTB. Challenges began immediately for the Timberwolf Advisor Support Team (AST). Our ten-man team had the responsibility to train approximately 1,000 Iraqi army soldiers and stand up the life-support facilities for the entire battalion. Weapons, vehicles, bunks, mattresses, bedding, mess hall equipment, uniforms, administrative equipment, and anything else a battalion needs to operate, had to be found, requisitioned, and set up. Vehicle support and CMATT support convoys were very limited due to intense insurgent activities during the month of April. Using borrowed two-and-a-half-ton trucks from the 30th Brigade, we pulled together basic life-support resources for the battalion.

Iraqi officers had undergone a one-month training period in Jordan. The senior NCOs (SFC and above) were graduates of the senior NCO course, which was managed by a civilian contractor company. All the battalion officers and senior NCOs arrived in Kirkush to conduct leader's integration training. Once integration training was complete, battalion leaders would conduct their own basic training for approximately 600 privates.

The AST's mission was to prepare, coach, teach, and mentor battalion leaders to successfully train their soldiers. CMATT based its training principles on the U.S. Army of World War II — if you have the necessary cadre to train an army, you can build quality, professional forces in a short time. Our grandfathers had years to get ready for war; we had months.

Leader integration exposed us to the material, cultural, and leadership challenges we would experience over the course of training. Classroom aids, such as laptops, light projectors, and PowerPoint slides, were nonexistent. It was not until two Timberwolf AST members risked life and limb to go to another forward operating base (FOB) and bring back supplies that we had the materials to train teachers. Even simple overhead projectors were difficult to find. The first week of class consisted of whiteboards and strictly hands-on training. For classes, such as first aid and weapons, this proved to be the most effective teaching method. For more difficult concepts, such as land navigation (intersection and resection proved to be extremely difficult), visual class materials were invaluable.

Cultural differences also proved difficult. Formations, timelines, and uniform standards were slow to be accepted. Part of the uniformity problem stemmed from a lack of supplies. Kirkush was the central distribution point for all Iraqi Civil Defense Corps (ICDC) and Iraqi army

uniforms. Therefore, as soon a new supply of uniforms arrived, they were rapidly distributed across all Iraqi law enforcement units. Sporadic supply deliveries limited the AST's ability to provide uniforms for even battalion leaders.

Finally, overcoming the ghost of the old Iraqi army proved to be a leadership challenge. Many of the officers and senior NCOs had prior military experience, either with the Iraqi army or in the Kurdish Peshmerga. However, in the old Iraqi army, the roles of the officer and NCO differed greatly from officer and NCO roles in the U.S. Army. We led by example, making us the first to teach Iraqi leaders to lead by example. Eventually, most Iraqi leaders understood what their roles and relationships were.

Arrival of the Iraqi soldiers also jolted leaders into leadership roles. We were pleasantly surprised when most of the NCOs stepped up and took charge when soldiers arrived. The officers and NCOs did not want to appear incompetent to the soldiers. The table of organization and equipment (TOE) strength for soldiers was 591, but 750 new recruits were brought in to account for eventual attrition. Over the course of five days, soldiers would show up at the front gate of Kirkush where Iraqi NCOs waited with busses to take them on post. This process went from 0900 hours until the front gate closed at 2000 hours. After undergoing various searches, soldiers were bussed to the battalion area for initial in-processing. Normal in-processing procedures included briefings, amnesty box, haircuts, medical exams, and equipment issue. Once

our battalion reached 750 soldiers, our rosters were closed and basic training commenced.

Basic training was broken down into two distinct phases: phase I dealt with individual soldier skills; and phase II taught squad and platoon maneuvers. Individual skills involved first aid, land navigation, general knowledge classes, and marksmanship training. Our battalion's weapons arrived about four days prior to the start of range week. Over 750 brand-new weapons from Bulgaria arrived; due to construction constraints, all were placed in one arms room. Needless to say, weapons draw was a long and time-consuming process. Without enough AK47s to equip every soldier (since we were overstrength), zeroing and qualification had to be redone at the completion of basic. The officers and NCOs ran both the zero and qualification range, with the assistance of some Jordanian soldiers assigned to CMATT. The classes paid off; nearly all the soldiers qualified.

Pay became another source of frustration for both the AST and the Iraqis. Without any sort of central banking system in place, all payments had to be made in cash. A roster was sent from Kirkush to Baghdad. The cash then had to make its way back to Kirkush and be distributed to Iraqi soldiers. To complicate matters, the rosters sent down to the AST teams were in English. Company officers would pay their soldiers and the English/Arabic problem was resolved with the help of dedicated translators. Once the soldiers had money, they needed time off to get the money to their families. Again, with

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no banking system in place, the only way for the soldiers to get money to their families was to hand-carry the cash.

An often overlooked challenge faced by all soldiers in Iraq is the language barrier. The Iraqi army is set up to mimic the societal breakdown of ethnic backgrounds. Our battalion strength would consist of 20 percent Kurdish and a split between Shiite and Sunni Muslims, which was a challenge for translators, many of whom only spoke Arabic. For example, in a class given in Arabic, a Kurdish soldier with a question would use another Kurd who understood both Kurdish and Arabic to translate. This soldier would then ask the translator the question in Arabic, who would in turn translate it into English for the AST instructor. An answer given in English would make its way back through two people in Arabic and then in to Kurdish — a long process, but vital to ensuring the new Iraqi army is fully integrated to match the cultural diversities of Iraq.

Phase-two training focused on getting the battalion ready to conduct operations in support of coalition forces. This meant training Iraqis on three key tasks: checkpoint operations; combat patrols through towns; and cordon and search operations.

Checkpoint/traffic control operations encompassed a variety of tasks, all of which we had trained as OCs at the CMTC, which included vehicle search, personnel search, and checkpoint set up. Using the same standards that IID used during their Operation Iraqi Freedom training, the Iraqis became proficient at running effective checkpoints. Due to a lack of tactical vehicles, we focused on dismounted patrols. Some after-action reports (AARs) coming out of Iraq argue that coalition forces needed to leave their vehicles and put more “boots on the ground” to interact with the Iraqi people, following the “beat cop on patrol” that the New York City Police Department used so successfully to cut crime. This fit our training perfectly for two reasons: we were limited on transportation options both for training and for operations, so dismounted infantry tactics were perfect for the 6th Battalion; and the Iraqi population felt more comfortable seeing Iraqi soldiers patrol through their towns, stopping vehicles or even searching homes. Understandably so — Americans would feel more comfortable seeing U.S. troops conduct military operations within the United States.

Phase two also involved more advanced weapons training. Machine gun training

using RPK and PKM machine guns added a potent punch to the light infantry battalion. Weapons were assigned to an individual and more time was committed to zeroing and qualifying. Reflexive fire training also helped Iraqi soldiers develop trust in their abilities, weapons, and teammates. The AK47 proved to be the more difficult weapon to use in close-quarter battle (CQB) training because of its safety switch location. Whereas the M16/M4 has an easy-to-reach safety switch (left side and easily moved with the thumb), the AK47 safety is on the right and harder to reach. Also, moving the AK47’s selector switch from ‘safe’ sets the gun on ‘full automatic.’ “Rock and roll” is not the preferred method for controlled pairs in a CQB situation. However, through extensive training and coaching from the AST, Iraqi soldiers developed enough skill and confidence in their weapons to conduct both safe and effective operations.

Concurrently, members of the 6th AST conducted right seat ride patrols with members of the 30th Enhanced Separate Brigade. Getting out and into the sector allowed advisors to see first-hand the problems, challenges, and different personalities that the Iraqis will soon face. Patrolling with the 30th Brigade also val-

idated many of the training scenarios units were put through at the CMTC. During situation training exercise (STX) lanes at Hohenfels, units often complained they were not given enough information, such as where to locate the town mayor, to conduct effective patrols. For example, on our first patrol, one of the tasks was to gather information on a small town outside of Balad Ruz. The town was designated by number, not name, on the American map. The patrol went from building to building, and eventually found the town mayor two hours later. The 30th Brigade again provided great support by answering all of our questions and providing great advice for their soon-to-be partners.

Members of the Timberwolf team served as subject-matter experts and go-to guys for every type of problem, which included establishing necessary systems from S1 to S4 to the arms room, dealing with pay problems (in Iraqi Dinar), or teaching Iraqi medics how to administer an IV to one of the many soldiers who went down due to the extreme heat. Once operational, we served as the communica-

tions link between the Iraqi unit and the U.S. unit we were supporting.

During the first Gulf War, the issue of properly using advisors with coalition units was addressed. It was determined that the role of advisors would include providing a communications link to the higher U.S. headquarters; providing accurate reports to the U.S. commander on successes or failures of the advisor's unit; providing an accurate assessment on the unit's capabilities to accomplish a mission; and coaching, teaching, and mentoring units — we were more than advisors.

Tankers and infantrymen all shared the same goal: to ensure Iraqi army soldiers were successful. Watching Iraqi army soldiers go from a nonexistent battalion to a fully functional operational unit, provided us all with a great sense of satisfaction, greater than any end of a rotation at CMTC. With a lot of patience, experience, and hard work, OCs from the CMTC successfully completed their mission and helped the Iraqi military take a step closer

to providing for their country's security and its future.



Major Mike Sullivan is currently assigned as battalion operations observer controller, Combat Maneuver Training Center (CMTC), Hohenfels, Germany. He received a B.S. from the U.S. Military Academy and an M.A. from American Military University. His military education includes Combined Arms and Services Staff School, Armor Officer Advanced Course, Tank Commanders Course, Airborne School, Air Assault School, Infantry Officers Basic Course, and Jungle Operations Training Course. He has served in various command and staff positions, to include airborne anti-tank platoon leader, airborne anti-tank company XO, and airborne rifle platoon leader, 3d Brigade, 505th Parachute Infantry Regiment, 82d Airborne Division, Fort Bragg, NC; primary maneuver instructor, Warrior Preparation Center, Kaiserslautern, Germany; commander, Headquarters and Headquarters Company and A Company, 1st Battalion, 63d (1-63) Armor, 1st Infantry Division, Vilseck, Germany; S3 Air, 1-63 Armor; and company/team primary observer controller, CMTC, with duty as an Iraqi army advisor, 6th Iraqi Infantry Battalion, Kirkush, Iraq.



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Commander's Hatch from Page 3

We have not only updated the Active Component AC3, but also the Reserve Component (RC) course. Beginning this August, the RC course will run 13 months. Each course is designed to be successive, commencing with a distance learning (DL) phase, followed by the first resident phase, then a second DL phase, and finally, a second resident phase. The first two-week resident phase includes testing on the task force military decisionmaking process and company/team operations. The second resident phase integrates RC students into each resident course in small groups of twelve students, where they will execute brigade operations by training with a capstone brigade simulation-driven command post exercise with the Armor Pre-Command Course.

Not to be left out, the Cavalry Leaders Course and the Scout Leaders Course are adapting as well. Instruction now reflects the recent changes in reconnaissance organizations and cavalry tactics, techniques, and procedures resulting from the Army's transition to force modularity. Graduates are now prepared to operate in a heavy brigade combat team (HBCT),

an infantry brigade combat team (IBCT), or a Stryker brigade combat team (SBCT) organization.

Perhaps the greatest change to the Armor Officer Education program is establishing the Basic Officer Leader Course (BOLC) here at Fort Knox. The course begins in January 2006 and will consist of three phases. BOLC I is pre-commissioning training and includes the Reserve Officers Training Corps, the U.S. Army Military Academy, and Officer Candidate School. BOLC II is the Warrior Officer Common Training Phase in which all newly commissioned lieutenants will attend a seven-week course at Fort Knox, Kentucky, Fort Benning, Georgia, Fort Sill, Oklahoma, or Fort Bliss, Texas. Fort Knox will support eight companies of BOLC II training. BOLC III includes a 15-week basic branch training phase at Fort Knox for all Armor lieutenants.

In addition to the new program of instruction changes, all OES courses have benefited from including recent Operation Iraqi and Enduring Freedom veterans as instructors. Over 65 percent of the AOBC instructors and 75 percent of the AC3 in-

structors are OIF or OEF veterans. Not only are we gaining experienced new instructors, but we are sending instructors to Iraq for a month to embed with Armor units to ensure our courses are current and relevant. I encourage Armor leaders currently in Iraq to welcome these instructors.

A final note on base realignment and closure (BRAC). As you know, the Department of the Army and Department of Defense recommendation to the BRAC committee is to move the Armor Center to Fort Benning and create a "Maneuver Center of Excellence." Personally, I think that the concept of combining Armor and Infantry Soldier training into a Maneuver Center is a good thing. We, in the Mounted Force, have always known that a combined-arms team is crucial to success on the battlefield. On the other hand, none of us want to see the Armor Center leave Fort Knox. Until decisions are final, Fort Knox will continue its mission of providing the Army with the best combat-arms leaders and Soldiers in the world.

FORGE THE THUNDERBOLT!

Post Traumatic Stress Disorder continued from Page 17

for each person dealing with PTSD are realized. Identifying these triggers will help soldiers cope with and manage their symptoms. As stated earlier, PTSD treatments vary, but it is essential that soldiers receive treatment to prevent symptoms from getting worse.

As a scout platoon leader at the beginning of Operation Iraqi Freedom I, my peers and commanders would probably have described me as someone with strong character and normal emotions, and not one to easily fall prey to any sort of "mental disorder." However, on 27 May 2003, my life dramatically changed when my platoon was attacked at a checkpoint. On that night, two of my soldiers were killed and another nine, including myself, were wounded. One would assume that my recovery was most difficult at the beginning when I was being treated in hospitals, but it was not. As my physical wounds began to close, my emotional wounds were beginning to open. Two months after returning from Iraq, I began to feel horribly depressed. What seemed like "survivor's guilt" sapped my motivation and seemed to dominate my life. I suffered insomnia, with short bursts of sleep that were interrupted by fearsome nightmares.

As my condition continued to deteriorate, I sought help from installation psychologists and slowly began to regain control over my life. Strangely, my return to combat in Iraq seemed to help my nightmares and depression. A year later, I realize the symptoms of PTSD will probably always be with me to some extent, but I have learned, with the help of trained professionals, to recognize and control my symptoms. Ignoring these symptoms will not make them go away, it only leads to more serious issues that might effect your loved ones and your career. Armor leaders should be aware that many soldiers will suffer in silence, which could have a negative impact on many things, including unit readiness. Every leader, from team leader to company commander, should know how to recognize and treat symptoms of PTSD.

PTSD is not a new problem, it was prevalent in the wars of the past. The characteristics and indications of PTSD can have destructive effects on soldiers and their families. Even though soldiers with PTSD appear physically unharmed, they truly are battlefield casualties and must be treated as such. Leaders can help soldiers deal with PTSD — learn more about the disorder and educate your soldiers. It

is our job as leaders to take care of our men, both on and off the battlefield.



Notes

¹Richard Gabriel, *No More Heroes: Madness and Psychiatry in War*, Toronto, Canada, Collins Publishers, 1987, p. 4.

²Zahava Solomon, *Combat Stress Reaction: Enduring the Toll of War*, New York, Plenum Press, 1993, p. 58.

³Ibid., p. 55.

⁴National Center for Post Traumatic Stress Disorder, accessed online at <http://www.nptsd.org>, 15 February 2005.

⁵Ibid.

⁶Kay Marie Porterfield, *Straight Talk About Post Traumatic Stress Disorder*, New York, Facts on File, Inc. 1996, p. 26.

⁷Ibid., p. 28.

⁸Ibid.

⁹Ibid., p. 34.

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Armor in Urban Combat *continued from Page 25*

or turret mounted (under-armor remotely operated), can take out a sniper within seconds after acquisition. Also, the remotely activated, internally mounted breech-loaded Soltam 60mm mortar in Merkava Mk4 is very effective for close-in defense against approaching tank-killer teams.

A new element first revealed at the 2005 LIC Conference is the Trophy Active Defense System (ADS). Based on a system designed in Israel by an industry consortium headed by RAFAEL Armament Development Authority, Trophy ADS rapidly detects and tracks any antitank threat, classifies it, estimates the optimal intercept point in space, and neutralizes it away from the platform using a countermeasure.

The Trophy ADS system has three elements, which provide threat detection and tracking, launching, and intercept functions. The threat detection and warning subsystem consists of several sensors, including flat-panel radars, placed at strategic locations around the protected vehicle, to provide full hemispherical coverage. Once an incoming threat is detected, identified, and verified, the countermeasure assembly is opened and the countermeasure device is positioned in the di-

rection where it can effectively intercept the threat. It is then automatically launched into a ballistic trajectory to intercept the incoming threat at a relatively long distance.

To enhance firepower in urban combat, the modular remote-controlled weapons station (RWS) supports various types of small- and medium-caliber machine guns, including 7.62mm/12.7mm machine guns, 40mm automatic grenade launchers, antitank missiles, and observation pods. They are mounted on a large variety of vehicles with no deck penetration. The Merkava Mk4, which has eliminated the loader's hatch, will be mounting an RWS.

Also revealed for the first time at the 2005 conference was the Namer Mk1 armored personnel carrier (APC), based on the turretless Merkava Mk1, which is being phased out of active service with IDF armor brigades.

Another highly effective machine, which proved its mettle in urban warfare, is the so-called "beast," which is a heavily up-armored D9 Caterpillar bulldozer employed by the IDF in the West Bank and Gaza. The U.S. Army ordered a dozen of these 52-ton monsters before Operation Iraqi Freedom. Equipped with machine

guns mounted in the armored cabin, these mean-looking "monsters" are quite impressive in high-risk combat areas, preceding tanks and infantry to clear rubble from the streets, crush suspected buildings, and activate explosive charges.

Although urban warfare is not exactly the tank's dream, more and more future battles will inevitably take place in such environments, and the role of tank support cannot be underestimated in a high-risk environment in which a commander wishes to use all elements to reduce casualties. Adapting heavy tanks to urban combat conditions will continue to make them indispensable partners in the future warfighting team.



Retired Lieutenant Colonel David Eshel, IDF, is a freelance journalist and serves as a defense analyst for several military journals. Following his brief service with the British Forces during World War II, he became one of the founding members of the Israeli Armoured Corps and served as a career officer with the IDF for 26 years. Educated at the French Cavalry School at Saumur, he later held various command and staff assignments and fought in all of the Arab-Israeli wars, including the 1973 conflict, when he served as the Armoured Corps' chief of signals.



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REVIEWS

Your Loyal and Loving Son: *The Letters of Tank Gunner Karl Fuchs, 1937-41*, edited and translated by Horst Fuchs Richardson, Historical Commentary by Dennis E. Showalter, Brassey's, Inc., Washington D.C., 2003, 163 pp., \$18.95

These are the letters of a young German, Karl Fuchs, who becomes a Wehrmacht tank gunner during World War II. His published letters begin on 6 April 1937.

In considering this book, three issues come to mind: the translation; the completeness of the collection; and censorship. The first two can be addressed quickly. While there is no copy of the original German text for comparison (and I would need someone skilled to translate), one can safely assume that the translation is accurate, because the translator is the son of the letter writer, and thus motivated to do a good job. Further, this book is its second printing, and if there were any problems with translation, they would have been corrected by now. As for the completeness of the collection: were any significant letters omitted? The reader is told on page 3 that these are not all the letters; however, the letters in the book tell a well-connected story, so the majority of them must be included in the book.

The question of censorship is not so easily answered, but I think it is an important factor, and I'll get to that a little later.

The main reason the letters became a story is that the ones selected are essentially to just three people, the writer's mother, father, and his fiancée (later wife). Understandably, it is to her that he writes his longest letters. Later in his letters, he refers to his newborn son, Horstie (who is to become the translator of these letters).

The letters present a snapshot of life in Germany just prior to the war, beginning with Karl Fuchs leaving his home village of Rosstal to be in National Labor Service (Arbeitsdienst). As a soldier-worker he has drill, inspections, and guard duty, and does work such as road building and dredging. It is a six-month tour, and at the time he is 20 years old. Life is austere and, as his fellow workers do, he makes and sleeps in a straw bed. Financially, he depends on help from home.

After this, he goes to teacher training at the University of Würzburg, where admission depends on satisfactory completion of work service, there are difficulties finding housing, and he must continue to ask for financial help from home. In one letter home, he asks his mother to send his SA (storm troopers) uniform to him. The book's commentator states that it was common for all young men to be in the SA, and if he had not been in the SA, he would have stood out in an undesirable way. This reflects a militarizing of society that is pervasive and fosters a standardizing of attitude, which has found its way even into university life.

There seems to be an underlying connection between this "in-sync" attitude, the effects of propaganda, and censorship. Establishing this attitude creates a fertile ground for propagand-

da, which then creates a sort of self-censorship. Overt censorship, or the result of it, is likely found in the fact that there are no detailed battle descriptions in the letters (there is one battle description in the book — a report that Karl writes, not a letter).

Karl becomes an elementary school teacher for a brief time, but then is drafted into the army to be a tank gunner. His father, Hans, has already returned to service in the air force, having previously served in the Luftwaffe during World War I. Karl is enthusiastic about his military life, but in time, his letters contain the usual soldier's complaints about training and his desire to get into the fighting. He maintains his interest in sports and cultural affairs, is an accomplished musician and singer, and at one point, wants his violin from home.

There are also political remarks in the letters, and it is these remarks that make one think about censorship, because one cannot help but feel that these comments were written for readers other than the writer's father, mother, or wife. While his anti-semantic comments were expected, the venom he displays toward the British is most startling. He refers to England as the arch enemy. He rails against the British for using incendiary bombs on the German countryside (according to an army report). This seems hardly likely to have happened, at least not on purpose, since the countryside would not be a priority target.

There are only two references to Americans, one occurring while he is on occupation duty in France. He states that he is on guard at a chateau owned by an American. The other occurs when he refers to "poor Churchill and Roosevelt." However, the most striking thing about the attitude revealed in the letters is the incongruity between what Karl Fuchs the letter writer states are his beliefs, and what his actions are. He lectures against hate, yet despises the British, Russians, and those who are Jewish. He complains about the war and wants it over, yet fails to recognize that Germany invaded France, Russia, and had plans to invade England.

After duty in France, in June 1941, he is sent to the Eastern Front. In a short time, he receives his first decoration, the tank assault medal, which is described in the book as being roughly similar to the U.S. Army's Combat Infantryman Badge. Thus, the German Wehrmacht had a combat recognition badge for its tankers during World War II, while the establishment of such a badge for the U.S. Army's armor forces is currently the subject of ongoing debate. He later receives the Iron Cross, Second Class. By this time, he will have taken part in twelve attacks.

By September 1941, it is raining in Russia, an ominous development, as it creates so much mud that Karl feels horses would be more useful. By October, it is snowing. In November, he writes a report on a tank battle at Vyazma (which occurred in October), during which four Wehrmacht tanks successfully defeated seven Russian tanks that were more heavily armored. The rounds from the German tanks simply bounced off the Russian tanks, but he

says the Germans outmaneuvered them. By this time, he has been promoted to sergeant. This is the only detailed tank battle description in the book.

By mid-November, temperatures are as low as -25° centigrade, and even though things have recently been going badly for German forces and Karl has lost friends in the fighting, he still believes the end of the war is in sight. He is killed in a tank battle just outside of Moscow on 21 November 1941. The United States had not yet entered the war.

If you like biographies as I do, then you will find this book interesting. It provides an excellent depiction of life in Germany in the Wehrmacht just before World War II. Most importantly, it reinforces the value of a free press. There are photographs of both family life and life in the army; Mr. Showalter's notes are excellent, and there is a glossary of German terms.

PAUL S. MEYER

Guerrilla – Insurgents, Rebels, and Terrorists from Sun Tzu to Bin Laden by David Rooney, Brassey's UK Ltd., 1 April 2004, 252 pp., 27.95

"The line that connects an army with its base of supplies is the heel of Achilles — its most vital and vulnerable point."

— John S. Mosby (1887)

Today in Iraq and Afghanistan, conventional fighting has ended and guerrilla wars have begun. With these modern wars as a backdrop, David Rooney writes a book in an attempt to trace the roots of unconventional warfare from its beginnings in biblical times through the intervening centuries to today. He does this by focusing on great guerrilla leaders and the wars they fought.

One of the first guerrilla wars discussed in the book is Judah's campaign as described in the biblical book of Maccabees. This early conflict demonstrates many of the characteristics of unconventional war that will be readily familiar to modern readers. Sounding like Sun Tzu, some of Judah's doctrines were: "Desist from open battle. Choose the time and place of your encounters, don't leave it to the enemy. When he attacks, melt. When he shies from fighting, assault. When he halts, harass him. When he flees, pursue." Judah also understood the importance of civil affairs planning and worked to assist the local population; in return, he received intelligence and supplies.

The Romans were on the other side of the equation. They were the established military having to put down guerrilla forces. The Romans called all these forces "brigands." Like many of today's third-world irregular forces, they often were brigands. They were men on the fringes of society with nothing to lose, so they volunteered to gain prestige or position.

During the Napoleonic Wars, the Peninsular campaign in Spain and Portugal gave us the term, "guerrilla." During this campaign, we were shown the two methods of dealing with insurgency — repression and pacification. Most

French commanders used repression to fight the Spanish underground movement, massacring thousands of civilians thought to be supporting the guerrillas. This method was a notable failure and actually served to increase the insurgent's size to the point of being capable of destroying battalion-sized convoy escorts. French General Suchet had much greater success employing the pacification technique. While he was ruthless in wiping out guerrilla bands, he also used a hearts-and-minds approach with the local populace. Similar to U.S. policy in Iraq, he established local city councils, disciplined his troops to respect local customs, and limited the military interference with daily life.

The example of Suchet is one of the few cases where the author points out what a conventional force did correctly to defeat a guerrilla force. The rest of the book focuses on successful 20th-century guerrilla leaders — this is where the book is at its best. It provides an overview of the intriguing men who, through unconventional means, shaped the past century. This book introduces the reader to a variety of not-so-well-known characters and discusses their mistakes and successes. It provides a good background of the rise of Osama bin Laden, which helps readers understand the story behind today's headlines.

There are some shortfalls to the book. The British author has a decided Anglo-Saxon slant — all of the western guerrilla leaders in the book are from the United Kingdom. There is no mention of American guerrilla leaders such as Francis Marion or John Morgan. The author attempted to cover too much material in too short a book. Therefore, most material is skimmed over. It is written more as a history book of key personalities, spending a great deal of time on what they did after the war, rather than analyzing the tactics, techniques, and procedures of the guerrilla war.

The book's biggest failure occurs in the epilogue. Here, the author drops the historical study and introduces his own opinions. The author refers to the great spiritual leaders, such as Jesus, Muhammad, and the Buddha, as cowards for not saying they were lying about life after death. Like his countryman, Neville Chamberlain giving away the Sudetenland, the author calls for the abandonment of Israel as the only way to have "peace in our time." He seems to have become too close to his subject, enamored of the invincibility of a guerrilla movement.

I recommend this book to the military reader as an introductory to guerrilla warfare. It is good for stirring up thoughts about current events by reading about past ones.

DEREK C. SCHNEIDER
MAJ, U.S. Army

Bougainville, 1943-1945: The Forgotten Campaign by Harry A. Gailey, The University Press of Kentucky, Lexington, KY, 1991, 237 pp., \$19.95

From October 1942 to May 1945, the forces under the command of General Douglas Mac-

Arthur fought an enemy determined to die over a topography totally unsuited for modern warfare. From the shores of New Guinea in October 1942, to the liberation of the Philippines and Okinawa in 1945, the U.S. Army engaged a series of island "leap-frogging" campaigns that were some of the most arduous campaigns of the war in the Pacific. Harry A. Gailey's *Bougainville: The Forgotten Campaign, 1943-1945*, deals with one of the most important, though largely forgotten battles, in MacArthur's triumphant march toward the Philippines — the battle for Bougainville.

Throughout Gailey's book, it becomes evident that while the Marine assaults throughout the Central Pacific were violent and very bloody affairs, they were relatively short in duration in comparison to those fought by the U.S. Army throughout the Northern Solomons. For example, the campaigns on Bougainville lasted for nearly a year and a half. Indeed, MacArthur's leap-frogging campaign across New Guinea to the Philippines involved soldiers, Marines, and Australian troops in a methodical battle of attrition against an enemy whom had enjoyed more than sufficient time to carve out an elaborate defensive network over terrain that was as inhospitable as any found throughout the Central Pacific. The lush jungle canopies that covered islands, such as Guadalcanal, New Guinea, New Georgia, Bougainville, and the Philippines, concealed an enemy skilled in jungle warfare, determined to fight to the end. Despite this, American infantrymen, tankers, airmen, sailors, and Marines came prepared to accept this challenge.

Bougainville: The Forgotten Campaign details the bloody assault for that island, a vital link on the road to New Britain and isolation of the main Japanese naval and air base at Rabaul. As Gailey points out, "From mid-1942 onward, the Allied commanders (General Douglas MacArthur, Admiral William Halsey, and General Sir Thomas Blamey, the Australian commander) in the South and Southwest Pacific had concentrated on Rabaul, first as the key to defending Port Moresby and southern New Guinea and then in planning the step-by-step offensives leading to the invasion of New Britain." Whereas, General Douglas MacArthur and Admiral Halsey initially adopted the strategy of bypassing the larger concentrations of Japanese troops throughout the South Pacific and letting those forces "wither on the vine." The landings on Bougainville, vital to the assault on the main Japanese bastion of New Britain, were the first of these leap-frogging campaigns.

Bougainville is also an excellent study in the relationship between the Australians, Americans, and New Zealanders during World War II. The book likewise serves as a "guide" on how to conduct combined and joint operations. It is here that Gailey raises the question on whether or not the third phase of the campaign should have been fought. While MacArthur and Halsey concentrated on their respective campaigns on New Britain and the Philippines after Bougainville, Generals Blamey and Savage saw it as an excellent opportunity to "show the Americans the true worth of the

Australian fighting man." Indeed, as far back as the Papua-New Guinea campaign (1942-43), General MacArthur and his staff had entertained serious reservations on the fighting abilities of the ANZAC troops. In the end, the Bougainville campaign put to rest any doubts MacArthur and, indeed, some Australian lawmakers, harbored as to the abilities of these tough jungle fighters.

Finally, Gailey provides a fair assessment of the Japanese situation and its strategy as Imperial Japan now faced a growing threat aimed directly at its major air and naval bases in the Northern Solomons, most importantly at Rabaul. While the author remains critical of the Japanese strategy at the outset of the war, by the time the Allies landed on Bougainville, the enemy had created an interlocking field of defensive works that forced the Americans and ANZACs to fight a bloody war of attrition.

Highlighted by excellent maps and photographs, Gailey's *Bougainville: The Forgotten Campaign*, is highly recommended. While neglected by most students of World War II in the Pacific, the battle of Bougainville remains one of the key stepping stones to victory in September 1945.

LEO J. DAUGHERTY III
Command Historian
U.S. Army Accessions Command

The Yom-Kippur War: The Epic Encounter That Transformed the Middle East by Abraham Rabinovich, Shocken Books, Random House, New York, January 2004, 560 pp., \$27.50

The 1973 Arab-Israeli War has been the subject of numerous books; among them are the infamous Chaim Herzog's *War of Attrition* and Hasanein Heikal's *Ramadan War*. Former U.S. Army veteran Abraham Rabinovich started 2004 with an excellent book on the tactical details of the 1973 war that *ARMOR* readers should enjoy. What distinguishes Rabinovich's book from others is how he highlights the critical decisionmaking skills of Israeli and Egyptian military commanders from the defense ministry to the tank commander in the field.

On 24 October 1972, Egyptian leader Anwar Sadat told his supreme council of the armed forces that he intended to go to war with Israel without Soviet long-range bombers and scud missiles. This would begin a discussion on what objectives needed to be accomplished to return the Sinai, captured by the Israelis during the 1967 Six-Day War. Should Egypt plan for an assault to capture the east side of the Suez Canal, the strategic passes around the mid-section of the Sinai, or the entire Sinai? Sadat, Generals Sadek, Ismail Ali, Shazli, and Al-Gamassy would dominate the debate. Rabinovich takes a realistic view and heaps praise over the competence of General Shazli, the Egyptian chief of staff who drew up the plans for the surprise crossing of the Suez Canal.

He also gives a detailed assessment of Israeli generals in the northern (Syrian) and southern (Egyptian) fronts. General Shmuel Gonen

commanded the southern front and readers will learn of the debate to either retreat and regroup, leading the Egyptians deep into the Sinai, or defend along the Suez Canal. The decision would have serious ramifications. He commanded a tank brigade in 1967 that broke through Egyptian lines and first reached the Suez Canal. Commanding from a half-track in the Six-Day War, the book discusses Gonen's temper, and the real-world experience of commanding an army versus a brigade from a bunker. Some 1,350 Egyptian tanks and 100,000 soldiers were amassed on the west side of the Suez, faced by only 450 Israeli soldiers and 91 tanks.

In the Golan Front (Syria), the book details how Israeli forces adjusted to the shock of Syrian night-fighting techniques. Arab forces were equipped with night-vision equipment that enabled them to attain the edge initially in the war. There is realism in how close the Syrians came to threatening northern Israel, and the combined air and armor tactics developed to get around the surface-to-air missile threats. General Yitzak Hofi (commander, Northern Command) quickly understood the Syrians were after the entire Golan Heights and that was no limited land grab. Tank command would pass to the lower ranks as Israeli ground commanders on the Syrian front were killed or were making their way to the fighting. Rabinovich highlights many amazing battle stories, including Lieutenant Zvika Greengold, who cobbled together a tank force by stopping stray Israeli tanks and commanding them to join his task force.

One chapter entitled, "The Humbling of the Tank," goes into the Sagger anti-tank missiles and rocket-propelled grenades used to give mass Arab infantry formations the edge on rapid Israeli armor. The book is an excellent study of the employment of armor, infantry, and innovative tactics under fire, along with command disputes over pursuing the war.

YOUSSEF ABOUL-ENEIN
LDCR, USN

Given Up for Dead: America's Heroic Stand at Wake Island by Bill Sloan, Bantam, 30 September 2003, 432 pp., \$15.00

Given Up for Dead does justice to the valiant stand of the U.S. Marines, sailors, and civilians who found themselves trapped on Wake Island following the start of the war in the Pacific theater on 7 December 1941. The conquest of the tiny atoll of Wake should have been an easy affair for Imperial Japan, but a combination of U.S. preparedness (as much as was possible, given the circumstances), and Japan's overconfidence and incompetence resulted in an initial repulse of the Japanese navy with heavy loss of life. Despite their valiant stand, which lasted over two weeks, the garrison surrendered on 23 December 1941.

Sloan's work provides useful background and context for the events that surrounded the Wake Island fight, but the story is primarily described through the eyes of the U.S. participants. This approach successfully conveys the intensity of the fighting, especially once the Japanese

landed on the island. Sloan's recount of the years military prisoners spent as prisoners of war, grippingly conveys their ordeal, and sadly notes the 1943 massacre of U.S. civilians who remained on Wake following its capture.

Sloan discusses the major controversy of the battle for Wake, which was whether the island could have been relieved by the U.S. Although a relief effort was mounted from Pearl Harbor, it was turned around when the message "Enemy on island. Issue in Doubt," was received from Wake's commander in the early hours of 23 December. Whether Wake could have been relieved is, in this reviewer's opinion, not the issue. Whether Wake could have been held, is the more relevant question, along with the potential price (both materiel and moral), the U.S. might have paid for trying. Given the superiority of Japan at the outset of war, the need to conserve U.S. forces, and Wake's distance from Pearl Harbor, the decision to sacrifice the garrison, while regrettable, was logical.

Sloan's goal was to pay tribute to those who fought at Wake and his work achieves this goal. That said, Sloan's contention that the U.S. stand on Wake Island deserves to be recognized in the same category as the battles of Bunker Hill, the Alamo, Gettysburg, San Juan Hill, or Belleau Wood is highly debatable — the U.S. stand at Bataan and Corregidor in the Philippines lasted longer, involved far greater forces, and represents one of the worst defeats in U.S. history; the loss of Wake pales in comparison. If the valor of those who fought at Wake is as unrecognized as Sloan argues, it is due more to an overemphasis in the U.S. on the European theater, not from a lack of courage by those who fought in the Pacific. While there is little here for the practitioner of armored tactics, *Given Up For Dead* is solid military history, and a worthwhile addition to the literature of the war in the Pacific Theater.

BENJAMIN TUCK
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Stray Voltage: War in the Information Age by Wayne Michael Hall, Naval Institute Press, Annapolis, MD, April 2003, 211 pp., \$36.95

"As we know, there are known knowns. There are things we know we know. We also know there are known unknowns. That is to say, we know there are some things we do not know. But there are also unknown unknowns, the ones we don't know we don't know."

— Donald H. Rumsfeld

Wayne Michael Hall's book, *Stray Voltage: War in the Information Age*, is about a former U.S. Army military intelligence officer's attempts to address the United States' options to counter asymmetric warfare in future conflicts. *Stray Voltage* explains the notion of knowledge warfare as our adversaries' principal asymmetric strategy and information operations as their tactic du jour, and then offers a wealth of ideas on how to deal aggressively with these threats in the 21st century. Along with knowledge war and information operations, the book discusses deception, information superiority, and knowl-

edge management. Hall also recommends the United States prepare for knowledge war by merging the country's brainpower and technology into knowledge advantage centers to develop a joint information operations proving ground where leaders train staffs in a cyber-world environment, as well as an internet replicator to prepare for conflict in cyberspace.

Although, according to some, Hall's book is a "call to action," *Stray Voltage* is overenamored with information and fails to offer real solutions. *Stray Voltage* falls into one of two categories about future wars: a man-and-organizations-will-solve-all school, an example of which is found in General David L. Grange's book *Air-Mech Strike*; and the perfect-information-will-win-all school, which maintains that smaller forces armed with better information/situational awareness will win future wars. *Stray Voltage* is a book of the second school. Books in this category tend to incorrectly treat the information age as something new and miraculous.

In *On War*, Carl von Clausewitz speaks on the vices of information. Perfect and timely information will never exist in war; fog and friction will do their best, to quote Clausewitz, "make things appear entirely different from what one expected." *Stray Voltage* attempts to show that with perfect information, from knowledge advantage centers and joint information operations, political and military leaders will have perfect knowledge of future battlefields. Hall offers examples, which include tactical communication systems and imaging functions for ground tactical forces, three-D image targeting devices, and microchips embedded in human beings to help process data faster and interact with computers to solve problems. Although in a Jominian sense, all of these systems have some benefits to soldiers on future battlefields, the fact remains that enemies will either find a counter to such systems or such information systems do not live up to their full potential. The Internet and airplane are both examples of technological achievements that have worked for and against our society.

Hall's desire to cover numerous information-age issues makes *Stray Voltage* difficult to follow. His book reads like a PowerPoint presentation. He has a basic understanding of computers and cyberspace, but the reader is sometimes unable to follow his research because Hall provides only a short list of references in his endnotes. Additionally, Hall never presents a clear doctrinal solution or cost-benefit analysis of many of his proposals. His suggestions to create a cyber national training center and an opposing force that actually speaks another language are both good issues for discussion. Had Hall concentrated his 211 pages on one subject area, *Stray Voltage* would have been an excellent book.

Without a doubt, enemies of the United States who lack military might and money will use the strategies and tools of asymmetric warfare to win future conflicts. But this has been true of many of our enemies since the Republic was founded in 1776. The Plains Indians, Philippine Moro warriors, Viet Cong, and Islamic terrorists have all used asymmetrical forms of warfare. The U.S. military has faced these threats

with determination and creativity and will continue to do the same, even in the age of information warfare.

JAYSON ALTIERI
MAJ, U.S. Army

Terrible Terry Allen: Combat General of World War II-The Life of an American Soldier by Gerald Astor, Presidio Press, New York, April 2003, 400 pp., \$25.95

Gerald Astor is an accomplished historian with numerous books and articles to his credit. His experience with military history began in the U.S. Army during World War II as an infantryman, and in the U.S. Air Force. His literary efforts followed his war experiences in magazines and with more than a dozen books, most of which are about the struggles during World War II. He continues his writing about World War II with this biographic effort.

Terrible Terry Allen is an excellent biography of a tremendously successful combat leader. The story takes readers through the military career of the longest tenured division commander in World War II, from his youth to his death. Gerald Astor does a marvelous job of intermingling his account of events, as those of the general, as seen through his recorded comments and letters to family and friends. Most notably are the letters he wrote to his wife. These letters tell of his personal concern for his wife and the challenges of managing his division and family during a time of war.

Most are familiar with General Allen's exploits as the commander of 1st Infantry Division — he developed the division into one of the most effective combat units in the war. General Allen led the division onto the shores of north Africa during Operation Torch. The division was then divided to reinforce other units, and only after the allied failure at Kasserine, was the division reassembled as a single fighting unit. It was during this time that General Allen's secondary reputation became evident. He was known to his subordinates as a capable and powerful battlefield commander who cared deeply for his soldiers. To his superiors, he developed a reputation as an independent actor working from his own agenda. Generals Bradley and Eisenhower had deep concerns about his ability and willingness to enforce necessary discipline on the division. The Big Red One developed a reputation among combat units as a highly effective fighting force, but among the upper echelon brass, they were a group of barely controlled hoodlums. Fights in rear area bars and failure to follow uniform regulations went a long way to reinforce this perception.

General Patton, though unhappy about some of the discipline failures, wanted General Allen in command when the Big Red One went into Sicily as part of Operation Husky. The division performed commendably throughout the campaign and was notably brilliant in the initial landings and defense of the beachhead. General Allen led the division from one success to another. Following the hardest and most significant performance of the division, General Al-

len was officially relieved. General Bradley had won the issue about his concerns over Allen.

General Allen returned to the states and was eventually given command of a newly activated U.S. Army National Guard division, the 104th Infantry Division Timberwolves. I was not familiar with this part of General Allen's career. He took new and inexperienced soldiers and created one of the most disciplined and toughest fighting units in the war. It was complete irony that the Timberwolves were known for the very discipline that the Big Red One supposedly lacked. This went a long way to show that the earlier criticism of General Allen was based on misperception, rather than factual observation.

The divisions trained and led into combat by General Allen demonstrated combat mastery in many aspects. Most notable was the emphasis and effort in developing and encouraging junior leader initiative. Another was the ability and emphasis on night attacks. The Big Red One and the Timberwolves were noted for their consistent ability to successfully conduct night offensive operations. This is a direct result of

the focus, professionalism, and emphasis of their division commander.

The book concludes with a brief discussion of the professional career of General Allen's son. He was killed in action in Vietnam. The life and career of Terry Allen Jr. is covered throughout the book and is useful in gaining an understanding of the mindset of General Allen.

Terrible Terry Allen is a good read for military history enthusiasts who enjoy biographies of combat leaders or accounts of World War II. This book would additionally be of interest to soldiers who are or who have served in the 1st Infantry Division or the Oregon Army National Guard, as many of the units in that state can trace their lineage through the 104th Infantry Division. This book is also useful for those who struggle with the misperceptions of superiors. The success of this tremendous combat leader, despite the challenges with his chain of command, demonstrates the benefit of focusing down and putting a premium on caring for soldiers as the first priority of any combat leader.

BRIAN L. STEED
MAJ, U.S. Army

Gunnery Branch Needs Your Help!

Due to a historical trend of limited input from the field concerning gunnery doctrine and combat development, Gunnery Branch, Doctrine Division, Directorate of Training, Doctrine, and Combat Development (TDCD), U.S. Army Armor Center, Fort Knox, Kentucky, is seeking comments from the force. Our job is to develop, write, and revise current and future U.S. Army field manuals concerning scout, tank, and mobile gun system (MGS) platoons and their corresponding gunnery manuals. To provide the force with the best product possible, we need comments from the field, which helps correctly identify trends in the force and possible mistakes that may have been missed.

As with all doctrinal publications, developing and processing these manuals is a slow, arduous process. These publications are living documents, evolving and changing as our missions and equipment change. Due to these changes, our work is constant. Our latest publications, FM 3-20.8, *Scout Gunnery*, and FM 3-20.12, *Tank Gunnery (Abrams)*, are awaiting the commanding general's review and signature, and then we go to print.

Our current focus is on FM 3-20.15, *Tank Platoon*, and the MGS manuals. We have completed the final draft of FM 3-20.151, *MGS Platoon*, and it is ready for the camera-ready copy phase. FM 3-20.13, *MGS Gunnery*, is being developed and we plan to have a draft ready for the MGS Strykers when they come on line for production later this year. If you are assigned to a Stryk-

er brigade combat team, advise your command and send us your recommendations. The Master Gunnery Branch and TDCD are working hard on this manual to provide the force with the best product available.

To access the Platoon Gunnery Branch AKO Collaboration Center to review information on manuals pertaining to your organization, go to the AKO homepage:

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