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MANEUVER FORCE

ARMOR

September-October 2005

ARMOR

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Features

Departments

Writing for ARMOR

ARMOR provides a forum for the open exchange of ideas on Armor and Cavalry areas of interest; to focus on concepts, doctrine, and war-fighting at the tactical and operational levels of war; and to support the education, training, and doctrine development and integration missions of the Armor and Cavalry warfare center.

While ARMOR often includes command information from the Armor Center, its main purpose — set forth in the U.S. Army Training and Doctrine Command Proponency regulation — is to nurture feedback from Armor and Cavalry soldiers. Information in ARMOR is not official, and often includes discussions of the strengths and weaknesses of current doctrine, proposals for change, and accounts of experimental techniques and procedures. During its 117-year history, the journal's hallmark has been a continuing, freewheeling debate and discussion among readers, many of whom introduced ideas, tactics, techniques, and procedures that are now doctrinally accepted.

Although it is our mission to provide an open forum for the exchange of ideas, we solely rely on articles from the field to provide invaluable information to the Armored and Cavalry forces. Your experiences and lessons learned are a critical link to battlefield success, especially in the current operating environment, and support the education, doctrine development, and integration of transformation efforts currently underway. To submit your ideas, experiences, and past and present lessons learned, simply refer to the writing guide below.

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The journal's focus is the Armor and Cavalry soldier up to the battalion and brigade level. Our articles, most of which come from officers and noncommissioned officers in the field, discuss the training, equipping, employment, and leadership of mounted soldiers, and the historical background of mounted warfare. Some articles are written by civilians and retired military who are experts in subjects of interest to our readers.

ARMOR articles seldom reflect the Army's official positions, nor is the purpose of the journal dissemination of doctrine or command information. As the chief proponent for Armor and Cavalry units in the Army, the Chief of Armor is charged with sensing feedback from the soldiers under his proponency, and this journal is a vehicle for doing this.

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Articles can be submitted in a number of ways:

- Most articles are sent as email attachments to: *ArmorMagazine@knox.army.mil*

- Articles can also be submitted on floppy disks with a double-spaced hard copy to ensure that the complete file is included. Mail to *ARMOR* Magazine, US Army Armor Center, Building 1109A Sixth Avenue, Room 371, ATTN: ATZK-DAS-ARM, Fort Knox, KY 40121.

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Photos and useful graphics greatly increase the number of readers attracted to an article. Even simple snapshots are adequate to help readers understand a situation, and can also be used as a basis for drawings by *ARMOR's* artist.

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"Shotgunning"

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Within two or three weeks of submission, you will either receive a notice of acceptance or a rejection and return of your article. If accepted, we will send a "Permission to Publish" form for your signature. We will also ask for a biographical sketch that will be briefed at the end of the article. Upon acceptance, we may tell you the issue when your article will appear, or we may have to hold it until an opening develops.

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We are not budgeted to pay contributors for their articles, but authors receive extra copies of the issue where their story appears, a certificate from the Chief of Armor expressing his appreciation, and a free one-year subscription to *ARMOR* from the U.S. Armor Association, an unrelated, non-profit organization that reprints each *ARMOR* issue for its members.

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COMMANDER'S HATCH

Major General Terry L. Tucker
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Battle Handover: Thoughts for the Future

On 12 October 2005, I will relinquish my position as the 40th Chief of Armor to Major General Bob Williams, who will proudly serve as the 41st Chief of Armor. It will be a change in leadership, much like we have routinely done since Major General (MG) Adna Chaffee, our first Chief of Armor, turned over the reigns to the 2d Chief of Armor, MG Jacob Devers, in 1941. We are fortunate to have a great mounted warrior, such as MG Williams, lead the Armor Force into the next phase of our transformation.

As I prepare to leave the office of the Chief of Armor and Cavalry, I have been reflecting on the many changes that have occurred in both the Army and the mounted force over the past few years. A series of challenges for our Army and the Armor branch came to mind. I want to take this opportunity to provide future leaders of the mounted force my thoughts on a few of these challenges.

We have few opportunities and limited time and resources to provide institutional professional education to our officers and noncommissioned officers. During this limited time, we must strike a balance between teaching traditional mounted technical competency and tactical proficiency while preparing our force for the war we are currently fighting. While preparing our Soldiers and leaders for current operations, we continue to receive directed "core" requirements that add to our already crowded programs of instruction and do not contribute to either technical competency or tactical proficiency. Many of these additions are attempts to fix administrative, disciplinary, or cultural challenges throughout the force by directed education of leaders and Soldiers. Every hour of time we spend on a "core" requirement comes at the expense of training proficiency in an existing warfighting task. We have to be careful; while attempting to fix problems in our Army, we cannot keep adding to formal education courses at the expense of relevant warfighting lessons.

One of my responsibilities as the Chief of Armor and Cavalry is to be the Training and Doctrine Command (TRADOC) proponent for the Future Combat System (FCS). The current plan is to field the first FCS-equipped brigade around 2017 and take the last Abrams and Bradley out of the force some time after 2050. That means that the grandsons of today's new privates will train and fight in Abrams and Bradleys. Therefore, as we transition to FCS-equipped brigades, we must ensure that our Abrams and Bradley fleets remain relevant on the battlefield. We must improve both the levels of lethality and survivability, and we must continue to improve in those areas that enable Abrams and Bradleys to operate as integral components of the FCS-equipped units. Last year, I proposed that we upgrade our entire Abrams fleet so that we have only two variants: the M1A2 SEP and M1A1 AIM. We cannot continue to field, support, and maintain the nine tank variants we currently have in our inventory. By the time we build FCS-equipped brigades, only the M1A2 SEP will be compatible.

We must also upgrade our Bradley fleet accordingly. Our combined arms battalions in the heavy brigade combat teams (HBCTs) are combined arms by design, so their tanks and infantry fighting vehicles must be compatible. We have neglected this requirement too long — we must match up the M1A2 SEP with the M3A3 Bradley and the M1A1 AIM tank with the M3A2 ODS Bradley as our two combined arms variants. This will be expensive and difficult, but if we do not make this commitment, we risk becoming outdated and irrelevant. The good news is that many of our senior leaders agree with the need and are now trying to resource this requirement.

One of the enduring debates within the Army is whether we should have three or four tanks per platoon — the longevity of the debate is amazing. Our Army has conducted study after study that always concludes the same thing: the optimal number is four. The final analysis always shows that the resources saved do not offset the loss in capabilities (cheaper is not always better). I expect this argument to reemerge based on observations about the three-vehicle mobile gun system (MGS) platoons in the Stryker brigades. We must be mindful of drawing parallels between MGS platoons and tank platoons. The MGS is not a tank; it was not designed to be a tank or operate like a tank. The MGS is an infantry support vehicle and has no better survivability or mobility than any other Stryker. It cannot perform the mission of a tank, should not be used in such missions, and we should never try to make that comparison.

No one doubted the absolute necessity of mounted forces during major combat operations in Iraqi's open terrain and urban areas during April and May of 2003. However, once major combat operations ceased, we sent mounted forces to Iraq without tanks and Bradleys, based on assessments that we would not need the firepower, survivability, or decisive action armored forces provide. We later realized that we were too quick to eliminate armor's vital presence on the battlefield and have spent the past two years trying to "heavy up" all our vehicles, including support vehicles, that were not designed or intended to be armored. The simple fact is: current technology does not allow us to obtain an Abrams survivability level from any other vehicle. Until we can field a better vehicle as part of the FCS, there is not a more appropriate force mix for

operations in Iraq than a combined arms team in armored vehicles. Every Soldier I've ever met wants better mobility and greater survivability. Even light infantry forces in Iraq routinely operate out of armored vehicles to improve protection and mobility and to increase firepower. While we talk a lot about "lightening up" the Army, our light forces are actually moving in the opposite direction. Every light commander in the warfight today is requesting more mobility, greater lethality, more protection, and greater survivability capabilities.

The U.S. Army Armor Center recently participated in an experiment to help determine whether the optimal mix of battalions in a modular brigade is one reconnaissance squadron and two maneuver battalions, or no dedicated reconnaissance squadron and three maneuver battalions with the additional task of performing reconnaissance and surveillance if the maneuver commander determines a need. After spending weeks and lots of money, we concluded that three maneuver battalions are better than two and having one recon squadron is better than having none. I could have figured that out with my driver over a beer. I bet most of you could have done the same. Experiments of this nature have become a trend during my time at Fort Knox. We are spending too much time and money on analysis that provides inconclusive or non-useful results, and we are ultimately drawing the wrong lessons from them. We must find a better, more effective way of testing new concepts and organizations.

As I prepare to leave the Armor Center and the Army, I leave these and many new challenges to the next generation of mounted leaders. I have great confidence in your ability to continue making the best Army in the world even better.

I will remind you of the incredible sacrifice and commitment of our mounted warriors in tanks, Bradleys, Strykers, HMMWVs, and every other vehicle we field to our force. I will remind you of the superb leadership of our senior Army leaders who show a balance of pride and humility that mounted warriors must possess. I will remind you of the magnificent noncommissioned officers that lead our Army from corps to division, and all the way down to crew level. They are the finest in the world — our Soldiers are the most versatile and agile in this or any other Army. They are the force that led the fight to Baghdad, the force that keeps Baghdad green, and the force that will be out front the next time our Army is placed in harm's way.

I thank those who contributed thought-provoking, insightful articles over the past three years. Your efforts are the sole reason that *ARMOR* continues to be the premier branch journal in the Army. It is the envy of all other branches. Today's battlefield is changing too rapidly for doctrine writers to keep pace. As a result, our Army must develop an even greater partnership between institutional schools and our Soldiers in the field to rapidly develop new tactics, techniques, and procedures. A piece of that partnership is professional journals such as *ARMOR*. In every issue, we have articles from young leaders about what worked for them in Iraq, Afghanistan, the Balkans, or a dozen other places. What better forum to spread good ideas throughout the mounted force. I encourage not just our Armor and Cavalry Soldiers, but everyone who has something to share to keep submitting articles to our magazine — help keep our mounted force on the cutting edge of today's ever-evolving battlefield.

I will soon end 33 and one half years as a Soldier. As I close this chapter of my journey, I leave with the confidence that the defense of the United States of America remains in good hands — as long as the mounted force rumbles.

FORGE THE THUNDERBOLT!

A Modest Proposal to Do Away With the Armor Branch

by Colonel Timothy Reese and Aubrey Henley

Jonathan Swift's 1729 literary essay, "A Modest Proposal for Preventing the Children of Poor People in Ireland from Being a Burthen to Their Parents, or Country, and for Making them Beneficial to the Public" (to slaughter Irish children for food), was a piece of satire, meant to prick the conscience of British landlords over their treatment of Irish tenant farmers.[1] Like Swift's essay, this article is intended to stimulate debate and lead to positive change.

The armor branch has outlived its usefulness in the structure of the U.S. Army; it is time to case the colors of the armor branch. We have a historic opportunity to change the Army's branch structure in support of a modular Army, force stabilization, and the current operational environment. More importantly, we must make this change now or we risk compromising the Army's effectiveness as we field and fight with the modular Army.[2]

Just as Irish parents no doubt gasped in terror and revulsion at Swift's immodest proposal, many armor leaders are likely doing the same. But before telephones at the Armor School are cut off and memberships in the Armor Association are revoked, read on.

In armor's place should arise a new branch of mounted warfare. This branch would combine the battlefield functions of today's armor, reconnaissance, and mechanized infantry forces into a unified whole. Armor, already the most effective branch across the full spectrum of conflict, will become even more versatile. In some ways, this hearkens back to the origins of America's armor.[3]

The timing of recently released Base Realignment and Closure (BRAC) recommendations is fortuitous. By now, everyone has seen the initial BRAC recommendation to move the Armor School to Fort Benning, Georgia, and create a "Maneuver Center of Excellence."[4] Well, if this were a poker game we would say, "I'll see your BRAC recommendation and raise you one." Yes, we support creating a maneuver center and at the same time, we support a major redefinition of the roles and missions of armor branch — and the infantry branch, but more on that later in this article.

Mounted and Dismounted Combat

This change is actually long overdue. Experiences during peace and war times have shown that armor and mech infantry units train and fight more like one another than do mechanized and light infantry units. The combination of tank, cavalry, and mechanized infantry units that may be needed in a particular situation is ever changing. Their view of and role on the battlefield, however, is similar — to close with and destroy the enemy using firepower, maneuver, and shock effect delivered from mobile, protected platforms. Whether conducting a screen or guard, or executing a combined mounted and dismounted assault to seize an objective and destroy an enemy force, the common thread is the speed, protection, and firepower provided by armored vehicles.

For years, tankers and scouts have in good nature chided their dismounted infantry brothers as having a map the size of a post card and the focus of a soldier leading the five-man stack to clear a room. Meanwhile, they consider themselves superior be-

cause their map resembles an atlas and their platoons measure progress by the grid square. I need not mention the "love" our dismounted brothers show when referring to tankers and scouts as "DATs, tread-heads, and turret plugs," who could not complete a run around the motor pool much less earn the Expert Infantry Badge (EIB) or Ranger Tab.

This friendly banter, however, reflects a deeper truth: mounted and dismounted soldiers train and fight differently. Put a scout, tanker, and mech infantryman together and they will easily and quickly move out in agreement on any tactical situation. One would be hard pressed to find a tanker, scout, or a mech infantryman to dispute the fact that one cannot accomplish his mission without the other. Put a tanker and a light infantryman together and their attempts to synchronize operations will resemble two porcupines mating. Effective synchronization can be done, it can be effective and satisfying to both partners, but it is slow and takes an extraordinary amount of effort and caution!

Dismounted infantry operations are different in space and time and require training techniques much different than those of mounted operations. The skills and discipline needed to conduct light infantry operations are extraordinarily difficult. We would rightly shudder at the thought of placing an armor captain in charge of a dismounted assault conducted by a Ranger company — he would be a "fish out of water" in every sense of the expression. But an armor captain feels at home leading a mounted attack of tanks and Bradleys, establishing a support-by-fire position, and coordinating the dismounted assault of an objective. The Ranger officer would be unprepared for this type of operation. It is time our branch structure conforms to what experience and history has refined.

The Modular Army

The structure of the modular Army also encourages these changes. The modular Army will consist of light, heavy, and Stryker brigade combat teams (BCTs). By this very design, the modular Army argues for dismounted and mounted combat arms branches. This light–heavy dichotomy will begin to have effects across all the doctrine, organizations, training, leader development, materiel, personnel and facilities (DOTLMPF) factors from professional development paths, to include unit manning, doctrine, tactics, techniques, and procedures (TTP), and equipment and training. One's "identity" will increasingly become heavy and light, not infantry and armor. The Army's branch structure, essentially unchanged since World War II, should more closely mirror its emerging modular organizational structure. The revised branch structure will also correspond with the Chief of Staff, Army's guidance to develop depth of experience as officers and noncommissioned officers (NCOs) spend their careers becoming the masters of either the mounted or dismounted fight.

The combined arms battalions of the heavy brigade combat teams (HBCTs) present the most powerful argument for making the change. At long last, the Army will have combined arms organic to the battalion structure: two tank companies and two mech infantry companies. Tankers and mechanized grunts will live, train, and fight together during three-year life cycles in the combined arms battalions. Soldiers will train and fight in the combined arms battalions through repeated life cycles over the course of their professional careers. Mixed groups of armor and infantry NCOs and officers will serve on the combined arms battalion staff while armor and infantry command sergeants major and lieutenant colonels will lead those units. Senior NCOs and

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officers at the battalion/squadron level will truly become combined arms experts. Over time, current branch differences will erode and a common focus and heritage will take primacy over current branch parochialism.[5]

Soldiers and officers should be assessed, trained, and professionally developed in an institutional structure that reflects the way they will fight. This will generate an institutional training base and a professional force of combined arms warriors that better supports training, and more importantly, the employment of modular BCTs on the battlefield.

Proponency for the light recon squadron in infantry brigade combat teams (IBCTs) should be realigned. The U.S. Army Training and Doctrine Command (TRADOC) has assigned all reconnaissance proponency to the armor branch, and there is sound argument for keeping doctrinal "purity" in this case.[6] However, recon and security tasks performed by those squadrons will be very different in nature from those tasks performed in support of a heavy or Stryker BCT. The troops of light recon squadrons will perform missions at the pace of and within the context of the dismounted fight of the IBCT.[7] The reality of administration, training, and operations will also tend to morph those squadrons more and more into the dismounted world. Those squadrons should therefore be manned and led by infantrymen.

There is certainly a logical case to be made for locating the Stryker brigade combat teams (SBCTs) within the branch of mounted warfare — their mobility, firepower, and recon capabilities are quite different from a "straight" IBCT. In some ways, they are today's legacy of the old Cavalry Dragoons. Armor branch has proponency for the reconnaissance, surveillance, and target acquisition (RSTA) squadron and the mobile gun system (MGS) platoons of the SBCT. But the primary purpose of the SBCT is the dismounted infantry fight, not mounted combat or the mounted assault.[8] While both sides of the argument have merit, on balance, the SBCT proponency should not change and remain with the infantry.

Some Thoughts on How to Make It Happen

Armor branch should be renamed to reflect this momentous change; it will be an emotional, but important, step. Bureaucratically, the term "Branch of Mounted Warfare" comes to mind, but the obvious acronym (BMW) has already been taken! The correct approach should be one that appeals to the heart, élan, and spirit of mounted combat. Most historical names, such as Cataphracts, Sagattarii, Monquidai, Cuirassiers, and Spahis, come with too much historical and cultural baggage. The name "Dragoons" is a candidate, but its origins lie solely with light cavalry formations. Other options are "cavalry" or "mechanized cavalry," which denote both light and heavy mounted units. These designations may cause some to look back to pre-World War II history at a time when we are looking forward, and these designations in some ways slight today's tankers and mech infantrymen.

For the purposes of this article, we will use the term "mounted maneuver force" (MMF). While not exactly an exciting etymological term, it is no less clever than the term "armored force" must have seemed back in 1941, when the mechanized cavalry and tank infantry were merged to form the armor branch. Yet for more than 60 years, "armored force" has been near and dear to the heart of every armor soldier. Certainly, there is an opportunity for other good ideas to be presented; and if all else fails, there is nothing inherently wrong with keeping the name "armor branch," as long as we find other ways to materially and spiritually recognize and welcome the change.

The necessary companion to this change is redefining the infantry branch as the branch of dismounted combat — it is already synonymous with dismounted warfare. Infantry, in our view, should retain its name and heritage, and can bring more unity to the branch once it focuses exclusively on the dismounted fight.

It will be a Herculean, but not an impossible, task to implement this change. The following list outlines just a few of the issues, both major and minor, and some initial recommendations:

- The branch insignia of armor should be changed, perhaps replacing one or both of its traditional crossed sabers with crossed rifles. The famous armor spearhead already contains a blue triangle that can be use to recognize the addition of mechanized infantrymen to the branch.

- Regimental lineages will need to be realigned.

- Names for buildings, classrooms, halls and gates, at the new maneuver center should be selected to reflect the heritages of mechanized infantry, cavalry, and armor.

- Initial military training in the MMF will necessarily train new soldiers in one of the three specialties: armor crewman (19K), mounted scout (19D), and mechanized trooper (19M?).

- Infantry branch should create a military occupational specialty (MOS) for dismounted scouts, perhaps 11D, to train and develop a cadre of professional, dismounted scouts.

- NCOs in the MMF should likely retain their MOS specialties through sergeant first class and consolidate into one MOS at master sergeant, as is done today.

- MMF soldiers should attend a common one-station unit training course, followed by assignment oriented training (AOT) courses for particular MOSs. Establishing two branches under a maneuver center may also provide opportunities for even more common training between dismounted and mounted branches, such as common core training for 11B and 19M infantry soldiers, and 11D and 19D scouts, which is not without precedent — the German army trains its tank crewmen and panzer grenadiers at the same school in Munster.

- Officer professional development models/career paths would be similarly revised: armor (19A), reconnaissance (19C), and mechanized troops (19B?).

- Advanced NCO courses and captain career courses should be redesigned to train senior NCOs and captains over the breadth of the MMF in addition to their branch specialties.

- After company or troop command/platoon sergeant experience, MMF officers and NCOs should become mounted warfare generalists and be assigned to combined arms battalions, heavy recon squadrons, or Stryker RSTA squadrons to broaden their experiences, according to the needs of the Army. The goal is for master sergeants, sergeants major, command sergeants major, S3s, XOs, and battalion/squadron commanders to be interchangeable among combined arms battalions and recon/RSTA squadrons.

- All heavy BCTs should be led by MMF colonels and command sergeants major, and staffed by MMF soldiers with a

"There is certainly a logical case to be made for locating the Stryker brigade combat teams (SBCTs) within the branch of mounted warfare — their mobility, firepower, and recon capabilities are quite different from a "straight" IBCT. In some ways, they are today's legacy of the old Cavalry Dragoons. Armor branch has proponency for the reconnaissance, surveillance, and target acquisition (RSTA) squadron and the mobile gun system (MGS) platoons of the SBCT. But the primary purpose of the SBCT is the dismounted infantry fight, not mounted combat or the mounted assault."

variety of backgrounds within the MMF branch. IBCTs and SBCTs should continue to be led by infantry colonels and command sergeants major.

- The MMF branch should be the proponent for all mounted maneuver doctrine, training, and combat developments. As such, TRADOC Systems Manager (TSM) Bradley, TSM Tank, TSM Mounted Warrior, and other mounted systems should fall under the MMF branch.

- Mortar (11C) training should move to the field artillery branch and the new fires center at Fort Sill, Oklahoma, should consolidate indirect fire training and proponency. Mortar platoons should remain organic to the combined arms battalions and infantry units should remain structured as they are today. However, the increased integration between tube and mortar fires training should provide better fire support to all units in the new modular BCTs.

- *ARMOR* Magazine should be renamed the *MMF Journal*.

- The MMF Museum could collocate with the Infantry Museum at Fort Benning, much like the military police, chemical, and engineer branch museums are currently operating.

- All MMF soldiers, armor, mech and recon, should be eligible for the Honorable Order of St. George and the Draper program awards.

Concluding Thoughts

Fighting on foot and fighting mounted have been different paths within the arms profession since ancient times. Years of training experience, the reality of the battlefield, the emerging modular Army, and recent BRAC announcements should encourage us to abandon some historical baggage and reorganize the armor and infantry branches for the future. The Army's transformation has institutionalized this reality and BRAC has now given us the opportunity to formally implement it. Reorganizing our current infantry and armor branches into dismounted and mounted combat branches recognizes that reality.

At the time of writing, it is too early to know the final outcome of the BRAC process. If the BRAC recommendations become law, then the "Mounted Maneuver Force" and the infantry branch could form the "Maneuver Center" at Fort Benning. One can easily see an option whereby the Armor School does not move to Fort Benning but instead becomes the "Mounted Maneuver Force" after welcoming the mechanized infantry to Fort Knox. After all, Fort Knox already has many of the facilities, ranges, and training areas needed for mechanized infantry training, as well as decades of experience with supporting mechanized training. Regardless of the final BRAC outcome, the armor and infantry branches should be realigned.

This change would also be a step toward aligning the Army for fielding the future force. Whether the day will come where only one maneuver branch is needed for the future force remains to be seen. Frankly, we are skeptical; but if so, moving now to create mounted and dismounted warfare branches is the correct interim step.

While many tankers and cavalryman see the BRAC announcement as a reason for crying in one's beer (at Fiddler's Green to

be sure!), we recommend taking counsel of General Patton's well known advice — *L'audace, l'audace, toujours l'audace!* The time to realign the armor and infantry branches along functional battlefield lines is now. Do we have the courage to face the challenge?

There are many more suggestions, recommendations, and ideas, but this should get the conversation going.

Notes

[1]Jonathan Swift, "A Modest Proposal for Preventing the Children of Poor People in Ireland from Being a Burthen to their Parents, or Country, and for Making them Beneficial to the Public, *Modest Proposal and Other Satirical Works (Unabridged),* Courier Dover Publications, 2 February 1996, 64 pp.

[2]General Donn A. Starry, "To Change an Army," *Military Review*, Fort Leavenworth, KS, March 1983, pp. 20-27. General Starry eloquently made this point at a critical juncture in the Army's history when he was Chief of the U.S. Army Readiness Command in 1983.

[3]Similar concept to Chaffee's initial notion of what the armored force should be. He sought to consolidate training responsibility for all components of the armored divisions within the armored force, and in the process, shape the doctrine and tactics, techniques, and procedures of this new force.

[4]Common sense says the U.S. Army should omit the words "of Excellence" after Maneuver Center. What other kind of center could be imagined — a center of mediocrity? This concept is not entirely new, previous U.S. Army Training and Doctrine Command (TRADOC) studies in the mid-1990s called for creating "Warrior Centers" and realigning the branches.

[5]Contrary to popular perception, the M1 Abrams tank and M2/3 Bradley will serve in the Army for decades to come, alongside the future combat system (FCS) family of vehicles — *if* the FCS is ever fielded. These stalwart vehicles will need continual upgrades and recap programs to keep

them serviceable and maintain their tech overmatch, but mounted warriors in 2030 will continue to ride the Abrams and the Bradley.

[6]According to table of organization and equipment (TOE), these squadrons are commanded by infantrymen; however, two of the three troops are led by cavalrymen.

[7]The mission statement of the light reconnaissance squadrons, as stated in Section 1 of the TOE, is "to conduct reconnaissance and surveillance in support of the development of the brigade's situational awareness and knowledge in the area of operations." Clearly, the determining factor of how these squadrons conduct operations will be the light brigade in which they are supporting.

[8]The mission statement of the Stryker brigade combat team (SBCT), as stated in Section 1 of the TOE, is to serve as a "full spectrum, combat force, but designed and optimized primarily for employment in small scale contingency operations (SSCO) in complex and urban terrain, confronting low-end and mid-range threats…" with special emphasis on "Dismount strength for close combat in urban and complex environment."

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"Dismounted infantry operations are different in space and time and require training techniques much different than those of mounted operations. The skills and discipline needed to conduct light infantry operations are extraordinarily difficult. We would rightly shudder at the thought of placing an armor captain in charge of a dismounted assault conducted by a Ranger company — he would be a "fish out of water" in every sense of the expression."

In light of the changes occurring to cavalry organizations as a result of modularity, I thought this article by the great actor John Wayne from the January-February 1951 edition of ARMOR was again timely and appropriate. Under modularity, the division cavalry squadrons that many of us grew up with will be no more. The future of the 3d Armored Cavalry Regiment (ACR) in its current form is undecided. In place of these organizations, we will now have reconnaissance squadrons at the brigade level, augmented by a series of unmanned sensors. As a result, some are saying that "Cav" is dead. I would counter instead that the rest of the Army is becoming more "Cav." With the exception of an aviation squadron, the heavy brigade combat teams (HBCTs) look remarkably similar to heavy cavalry regiments. This is no accident. Since divisions will no longer have dedicated reconnaissance and security forces, brigade combat team units of action will have to fulfill those missions. That means that the combined arms battalions must be prepared and trained to perform roles similar to Cav squadrons. Lately, some have been saying that every soldier is a rifleman. I would argue that now, every soldier is also a cavalry trooper. John Wayne said that the Cavalry was his favorite branch because of the "great tradition of its heroic past." While cavalry organizations may change, the spirit and traditions will remain alive as long as great Soldiers execute their missions with the initiative, dash, and panache that for so long have characterized the cavalry. Long live Cavalry élan.

— Major General Terry L. Tucker

The Men Who Put the Arm in Army

by John Wayne

They may have changed the Cavalry to Armor, but nothing can ever erase the great tradition of its heroic past. And in the midst of change, the Cavalry is living up to its famous heritage.

In spite of all the glamour of the name, the Cavalry was never just an arm on which the lavender and old lace of chivalry could be draped. The American cavalryman has always been trained to fight as circumstances demanded. He was a first-rate infantryman when he had to fight on foot, and he quickly got the knack of artillery. As a member of the Armor Branch, the cavalryman is sure to give the enemy "hell on wheels."

What does a movie actor know about the Cavalry? Well, you might say I'm a cavalryman by profession: a "veteran" dating back to the 1870s. You see, I was a cavalryman in "Fort Apache," "She Wore a Yellow Ribbon," and recently in "Rio Grande."

Actually, I am in a unique position to be able to choose my favorite branch of the service. In my film roles, I've been in the Army, Navy, Air Corps, and Marines. I've even been a rifleman in the Second Kentucky Regiment of Civil War days. If anyone were to ask which branch is my choice, all I can say is, "give me my boots and saddle."

It's no accident that a great producer, such as John Ford, chose Cavalry as the subject for great motion pictures at least three times. In selecting the Cavalry, he chose a subject with built-in thrills, and with the drama and spine-tingling action recorded in history by men such as "Light

"But no single historian — least of all a movie actor — can put into words the whole thrilling story of the Cavalry. No more than any legislation of Congress can ever change the true meaning of the word Cavalry. They may have taken the word out of the Army: but they'll never take it out of our history."

Horse Harry" Lee, Francis Marion, "the swamp fox" of Revolutionary War fame; men like Jeb Stuart and his Civil War raiders; men like Phil Sheridan and his "Yellow-leg" troopers of the Army of the West. History has recorded them all — Custer, Patton, and all those nameless heroes who helped to mold this country's destiny.

My roles as a cavalryman awoke an interest in this great branch of our Armed Forces — an interest which led me to a new appreciation of the heroes who fought on horseback. Of the Arms which in a modern army are auxiliaries charged with the duty of assisting the Infantry in accomplishing its mission, Cavalry is the only one that has a military history as a self-sufficient fighting force.

The armies with which the Moslem conquerors, as well as Genghis Khan, carved out their empires were composed almost exclusively of Cavalry. With the passing of the Age of Chivalry, along with the development of firearms, the Cavalry inherited the pride and traditions of the iron-clad knights. They developed the technique of utilizing the mobility of Cavalry for surprise, and its shock power for disrupting enemy lines. The well-timed Cavalry charge against a vulnerable flank or line became the conventional knockout punch of competent commanders.

Even the so-called blitzkrieg is merely the Cavalry tactics of the American Civil War, streamlined, and moved by machines instead of horsepower; supplied with increased firepower, tremendously speeded up, and supported by planes.

During World War II, horse Cavalry troops with speed and daring carried out vital reconnaissance missions in the rugged mountains of Central Italy. They penetrated ravines and reached precipitous mountain peaks inaccessible to mechanized troops. They gained information of unmapped trails and roads which the infantry used in moving up to surround and capture objectives.

The Cavalry has been an important part of the U.S. forces since the first dragoons of Washington's Army. But it was in 1832, when the Sacs and Foxes became restive along the Upper Mississippi and General Scott was making the Army famous for its pacification measures, that the Cavalry really came to the front. After the War of 1812, the Cavalry had fallen into the discard. Now, it was rejuvenated with a force of 600 mounted "rangers." From then on, Cavalry grew to its golden age. Cavalry was essential to pursue the hard-riding Indians — at first, a full regiment of dragoons was drummed to the colors, and then a second regiment.

When the new territories of New Mexico, Arizona, Colorado, Nevada, Utah, and California came under the flag, with an army of but 8,000 men to cover and protect a vast area, the role of the Cavalry was plain.

The 3rd Dragoons marched 2,500 miles from Leavenworth, Kansas, to Oregon, in those days. By 1855, the army had five regiments of Cavalry to ten of infantry. After the Civil War, Indian tribes in the West began again a war of extermination against the whites, and it was then that the Cavalry came into its own. Ten regiments, the striking force of a small but tough and rigidly disciplined army, were placed in the field. There were 300,000 Indians facing General Sheridan, who had but 1,200 Cavalry and 1,400 Infantry when the campaign started.

It was this great era of the Cavalry that John Ford chose for his pictures. And somehow, I feel that it was Ford's most recent, "Rio Grande," that made me a full-fledged cavalryman.

In early September 1947, Ford read a story called, "Mission With No Record," in the *Saturday Evening Post.* It was an amazing and little-known story of a heroic but unsung chapter in the colorful history of the U.S. Cavalry following the Civil War. Ford bought the rights to the story, and then set it aside for a time when he could produce a picture based on the event.

The time came when Herbert J. Yates and John Ford signed a long-term contract, and Ford chose this thrilling Cavalry epic as his first movie for Republic Studios.

The movement of the filming crew and cast to the location site resembled a Cavalry and Armored maneuver in itself. Thirty-two pieces of equipment transported camera and lighting equipment. Five horse trucks transported twenty-five horses from Hollywood, and 90 more horses were obtained from surrounding ranches. The construction crew built an entire mammoth Cavalry fort.

Filming "Rio Grande" began on 15 June 1950; and to capture some of the thrills and action that are associated with a movie depicting part of the history of the Cavalry, $50,000 was spent by Republic on stunts alone.

Months of preliminary research preceded the actual filming of "Rio Grande," and I spent many fascinating hours with Ford reading up on Cavalry lore, even the music favored by cavalrymen of the past.

Back in 1870, for example, when Phil Sheridan's outnumbered troopers waged their fierce battles against the Apache and Sioux, the ringing notes of "The Girl I Left Behind Me," played by the post band, would be the last thing the intrepid "yellow-leg" detachments heard as they galloped through stockade gates after the enemy.

But no single historian — least of all a movie actor — can put into words the whole thrilling story of the Cavalry. No more than any legislation of Congress can ever change the true meaning of the word Cavalry. They may have taken the word out of the Army: but they'll never take it out of our history.

Learning and Transformation

by Major David Culkin

Colonel Naughton enjoyed being with his exuberant, young staff: the young chemical corps officer straight out of Reserve Officers Training Corps (ROTC); the experienced XO who had seen time in the Gulf; and the aviation assault company commander who was thinking of getting flight time instead of further wargaming, were all dedicated professionals who, despite varied levels of tactical experience and backgrounds, had a working knowledge of the military decision making process (MDMP). Why then, in the contemporary environment, did they consistently resort to abbreviating the planning process? Why did planning products lack substance, such as the analysis needed for a commander to make a decision?

The commander, having served as an observer at a training center had seen units of all experience levels and types, from National Guard and active duty divisional brigades to brigade combat teams, turned to shortcuts to meet mission time lines. He was acutely aware of how little time the unit had before deploying to its area of operations (AO), where the staff would be expected to plan full-spectrum operations that were flexibly responsive in a joint and multinational environment.

While they were able to accomplish the current mission, the commander soon realized he had more questions than answers about how leaders make decisions,

for example: could the unit perform the mission better than the staff had planned; if the staff routinely condenses the MDMP, is there a flaw in the "standard" format; is the MDMP so detailed that it is cumbersome to all but experienced staff planners; does iterative experience with the MDMP, as doctrinally outlined, enhance staff planning and battlefield performance; how much of a role does staff experience and cohesion play in military decisionmaking; are we asking the right questions in the mission analysis process; and is a change required to doctrine or just to tactics, techniques, procedures (TTP) that may offer a new way of looking at the same process?

The Issue of Leader Development

The characteristics of the modern battlespace are increasingly challenging. Tomorrow's military leaders must be prepared to think and act flexibly to respond to fluid scenarios, ambiguous problems, and scarce resources. The U.S. Army has come a long way in transformation. While Army leaders have implemented several superficial reforms in the past decade, such as the black beret, the Stryker program, and personnel stabilization, an underlying thread that links such changes together is absent. Some maintain the result has been "buzzword politics," rather than true transformation. External actors in an increasingly lethal world have forced the United States' premier land forces to address tough, introspective concerns —

in particular, the Army's ability to improve its existing doctrine, structure, and culture to create an Army that is more flexibly responsive to an ever dynamic security environment.

Army doctrine provides a comprehensive overview of leader development. U.S. Army Field Manual (FM) 22-100, *Army Leadership*, defines leadership as a process of influencing people in a way that improves an organization, "Leadership is *influencing* people — by providing purpose, direction, and motivation — while *operating* to accomplish the mission and *improving* the organization."[1] Leader development is a process by which an organization produces leaders who can solve its current and future problems. The doctrinal manual describes the process of developing leaders with certain personal values by providing them a breadth of experiences through institutional learning and field assignments.[2] Training and education — building blocks of learning — constitute the forum with which the Army can most effectively mold leaders along standard expectations and requirements (see Figure 1). To determine the necessary attributes for future leaders, the Army must first analyze the contemporary environment.

There is little doubt the world is a dangerous place — ambiguity grows every day in international relations. With more fluid environs, how can a staff adapt to respond more flexibly to contemporary
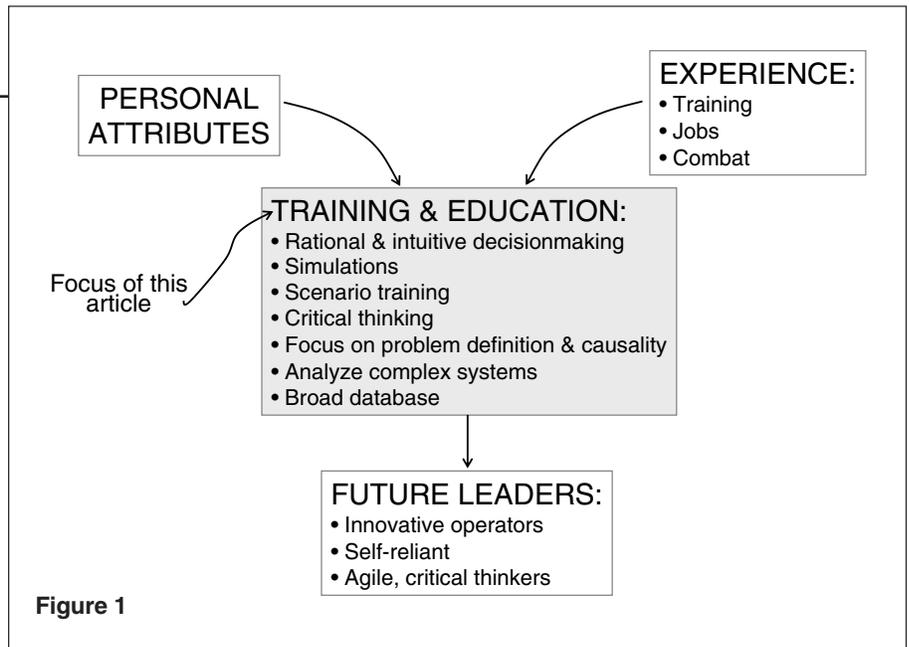
challenges? There is a need for institutional change in military leadership education that starts with how we grow leaders and teach them to think critically. As Figure 1 illustrates, the Army's future leaders require skills in critical and creative thinking, self-reliance, and competence to confront the dynamics of the contemporary battlespace. If innovative, self-reliant, and agile leaders are what this nation expects, how do current leaders identify obstacles to that development, determine the end product, and encourage new ways of thinking? There are three factors that address this introspective process: expectations and the modern security environment; the Army as a learning organization; and institutional learning that provides a necessary link between personal field experience and leader development. Learning is the nexus where the U.S. military can most effectively influence how future leaders think and therefore act. This tenet has significant implications for institutional reform.

Expectations and the Modern Security Environment

The U.S. Department of Defense (DoD) has expended tremendous amounts of energy in developing theories to explain the characteristics of the battlespace not only of today, but of tomorrow as well. The result is a conglomeration of observations and recommendations from disparate disciplines and agencies. While the effort, largely energized by the Chairman of the Joint Chiefs of Staff (CJCS), continues, current publications clearly indicate trends for future developments. Future military operations will tend to require a military that operates jointly, collaborates with other agencies and nations, and flexibly exploits capabilities through agile thinking.

The context in which nation-states have conducted affairs has become a very fluid environment. Michael Evans discusses how the international arena has dramatically changed from the traditional Westphalian nation-state system to one with far more non-state and trans-state

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Figure 1

PERSONAL ATTRIBUTES

EXPERIENCE:
• Training
• Jobs
• Combat

Focus of this article

TRAINING & EDUCATION:
• Rational & intuitive decisionmaking
• Simulations
• Scenario training
• Critical thinking
• Focus on problem definition & causality
• Analyze complex systems
• Broad database

FUTURE LEADERS:
• Innovative operators
• Self-reliant
• Agile, critical thinkers

actors than ever before. In this highly charged environment, he believes future forces must employ adaptive strategy, analyze vulnerabilities and consequences, use "diplomatic cooperation," and apply "new norms of international law" that would allow preemptive operations.[3] He observes, "To meet the challenges of tomorrow's wars, Western countries will need highly mobile, well equipped, and versatile forces capable of multidimensional coalition missions and 'mastery of violence' across a complex spectrum of conflict."[4] A military operating in this highly charged environment will need to be increasingly flexible, able to respond to various situations — sometimes simultaneously. Organizations, such as the joint staff, have considered how military forces must morph in response to this dynamism.

In *An Evolving Joint Perspective: U.S. Joint Warfare and Crisis Resolution in the 21st Century*, the joint staff and DoD have tried to better understand the skill sets that the contemporary military must possess. This publication highlights key characteristics and capabilities that the U.S. military will require to face challenges in the security environment. It initially outlines the characteristics and capabilities of the joint force in the 21st century, which include: synergistic employment of all services from both Reserve and Active Components; key employment of forces at the operational level; leaders leveraging service capabilities for a unified effort; "incorporating *necessary capability redundancy with minimal duplication*;" synchronizing with interagency and integrating with multinational partners.[5] Specifically, joint teams will have

"An Evolving Joint Perspective *notes that cultural change is required to effect the "'expeditionary and joint team mindset:' this mindset must permeate all aspects of future joint and Service force design, doctrine, capabilities, organization, training, equipment, deployment, employment, and sustainment."* As a result of tailored forces with more dynamic commitments, future joint forces may increasingly rely on the resources of sister services to accomplish missions."

to respond to crises and conduct forcible entry, global projection sustainment for extended periods, synchronized operations in which different units employ unity of effort, and continuous command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR).[6] *An Evolving Joint Perspective* notes that cultural change is required to effect the "'expeditionary and joint team mindset:' this mindset must permeate all aspects of future joint and Service force design, doctrine, capabilities, organization, training, equipment, deployment, employment, and sustainment."[7] As a result of tailored forces with more dynamic commitments, future joint forces may increasingly rely on the resources of sister services to accomplish missions.

The U.S. Joint Forces Command (US-JFCOM) has developed a theory that considers the various threats the U.S. will face and the capabilities it needs to neutralize them. The document, *The Joint Operational Environment—Into the Future*, outlines the joint staff's theory of the future security environment and its expected challenges. The analysis coherently summarizes key characteristics of future military operations in the joint environment, which include increased operations in complex terrain, maritime operations in the littorals, amplified information operations and warfare, widespread space operations, vulnerabilities of air power to widely proliferated surface-to-air missile (SAM) systems, intense struggle for access to areas of operation, continued political limitations

on force employment, increasingly fractious coalitions and alliances, difficulty in matching rules of engagement to varied areas of responsibility, diverse and global media interaction, and asymmetric threats to friendly vulnerabilities.[8] These characteristics help provide a framework on which national security policy can build. The 9/11 Commission attempted to make recommendations that would aid this process.

The 9/11 Commission recently had to contend with some of the persistent issues of bureaucratic consolidation. While centralized planning and authority may result in a more flexible structure, it also may result in "too much power in one place."[9] The commission concludes that institutional reforms will not eliminate interagency conflict or the continued need for collaboration. Perhaps this is a good thing in that friction — the very thing consolidation would attempt to mitigate — tends to guarantee checks and balances. Reforms that result in consolidation, while not erasing department identities, may allow the government to respond to contemporary challenges with adequate levels of efficiency. The commission recognizes the difficulty of implementing such reform, but it acknowledges that the United States has conducted significant transformation before and during wars, much like the defense reforms at the end of World War II and during the Korean Conflict. "Countering transnational Islamist terrorism will test whether the U.S. Government can fashion more flexible models of management needed to deal with the twenty-first century world."[10] In

short, there are costs and benefits to institutional reform that must be assessed prior to implementation. Only open-minded dialogue and a critical thought process can produce flexible leaders who can confront future challenges.

The Army as a Learning Organization

The Army must face these challenges today by developing a unified, strategic vision for future leader development. Two elements that will foster progress are vision and leadership. Conversely, perhaps the greatest obstacle will be sociocentrism — the tendency to perceive and assess issues in an Army-only view, without regard for other worldviews. The danger comes when an organization deceives itself with the rightness of its agenda, unable to reform before irreparable damage occurs. The question then becomes: "How can an institution fight sociocentrism?" One way is through adopting a policy that encourages constructive reform and self-awareness.

Vision and leadership help define the environment of conflict among actors, whether they are states, coalitions, or nongovernment organizations. Vision links strategic policy to tactical actions; leadership relates to training the next generation of military personnel. The less vision and leadership are honed, the longer the conflict, which increases the chance for negative consequences. Personal traits of character, free will, and initiative all factor into the quality of individual troops. Disciplined training — fostered by esprit de corps — provided by motivated leaders translates into professional and effective units. As du Picq argues, the individual soldier — the product of quality leadership, training, and discipline — is the most valuable weapon on the battlefield.[11] Thus, any reform the Army pursues will be ineffective if it does not develop better soldiers and leaders, which is the key to this process.

The Army has learned several hard lessons through organizational change, to include:

• Change is neutral; individuals decide to attach positive or negative meanings to change.

• *Good* change is good — the reform complies with common sense and socially accepted moral codes.

• Change for the sake of change is not a sufficient reason to implement reform. Using change as a rationale often becomes a battle cry for the self-serving reformer; change is not a *need*.

• Learn from past experiences, most institutions have some form of systemic ar-

chiving. After-action reviews (AARs) are designed to capture event objectives, participants, actions, and recommendations for improvement and sustainment. This process is culturally ingrained at all levels of leadership. It really works, if members are disciplined and actually do it, and provides planners useful feedback for future operations.

• Finally, leaders of change must respect themselves and the organization. Let people do their jobs; demonstrate trust in their abilities and an aversion to smothery micromanagement.

When leaders take reasonable time to implement reforms, they recognize there may be a good reason for current procedures. By questioning causal links and anticipating consequences of decisions taken, leaders can make a significant and positive impact on an organization. Subordinates who see a humble leader who makes rational decisions will tend to respect more fully the "new regime."

If military organizations and leaders are to adapt to changing environments, they must elect to learn. While the classroom may vary from a sterile room to a blood-soaked muddy hole, the lessons of practical experience can be actively applied to learning. Eliot Cohen and John Gooch, in *Military Misfortunes: The Anatomy of Failure in War*, argue that military organizations and their leaders need to be learners, "some things can be learned in peacetime, and others only in war, and … if the military are to make the most of their opportunities when war comes they must be organizationally prepared to learn. …Military organizations should inculcate in their members a relentless empiricism, a disdain for a priori theorizing if they are to succeed."[12] The Army, already in mo-

"Disciplined training — fostered by esprit de corps — provided by motivated leaders translates into professional and effective units. As du Picq argues, the individual soldier — the product of quality leadership, training, and discipline — is the most valuable weapon on the battlefield. Thus, any reform the Army pursues will be ineffective if it does not develop better soldiers and leaders, which is the key to this process."
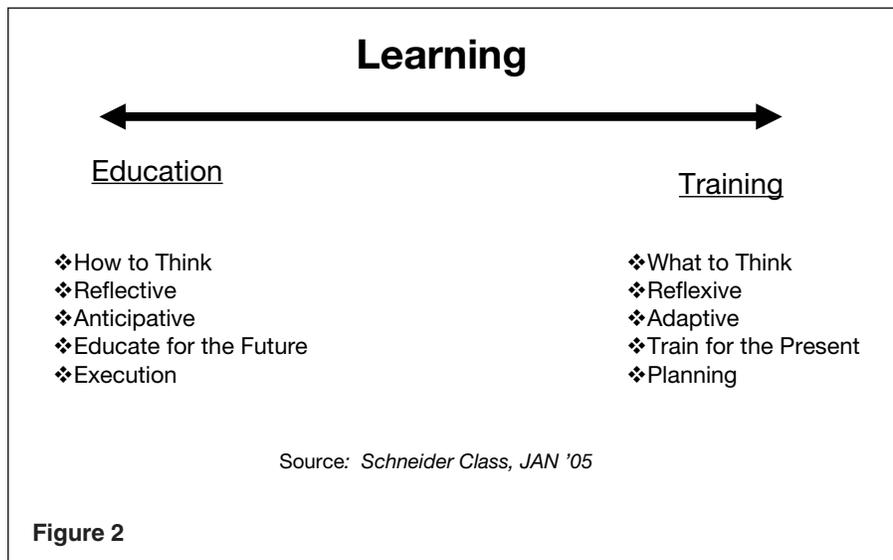
tion during transformation, will self derail if it fails to learn.

Training and Education Linkages in Leader Development

How can a learning organization, such as the Army, transform for the future? The answer may lie in a cultural shift that prioritizes the learning process as an investment in leader development. As previously discussed, training and education help link experience and personal attributes to form future leaders. Education and training are different, yet critical, aspects of learning. James Schneider describes learning as a process in which students must apply both their education and

training to develop, "learning takes place along a spectrum: at one end is the kind of learning that occurs through training; this learning is largely reflexive and rote in nature. At the other extreme is education, which is mostly reflective and self-reinforcing. Together, the trained mind and the educated mind embrace new professionally relevant experiences to produce wisdom."[13] Institutional schooling is a part of the learning process. For example, the U.S. Army's Advanced Military Studies Program (AMSP) at Fort Leavenworth, Kansas, espouses critical thinking in complex problemsolving. For more than two decades, the program has produced leaders, grounded in history, theory, and doctrine, who are recognized as critical thinkers, possessing unparalleled complex problemsolving skills. Increased integration of professional education is paramount. This implies introducing officers and battle staff noncommissioned officers (NCOs), from both Active and Reserve Components, who will work together in capstone exercises similar to how they will work together in command posts. Additionally, integration refers to greater inclusion of multinational and interagency action officers during planning processes. Only in this manner will the U.S. Army begin to train as it fights at operational and strategic levels. The reform of training begins with changes in how an organization's members perceive inherent problems.

A major challenge confronting the Army is shifting its mental model from being focused on the mission (what to do) to

Learning

Education	Training
❖How to Think	❖What to Think
❖Reflective	❖Reflexive
❖Anticipative	❖Adaptive
❖Educate for the Future	❖Train for the Present
❖Execution	❖Planning

Source: *Schneider Class, JAN '05*

Figure 2

first defining the problem (what is the issue). Define the problem before the mission. A fundamental skill in military decisionmaking is, ironically, often overlooked. The second step in the military decisionmaking process (MDMP), mission analysis, may be more aptly labeled, "problem analysis," because adequately defining the bounds of a problem is essential for developing a unit mission that addresses the problem. In fact, defining the problem for subordinates in time-constrained circumstances may be more important than deducing a mission.

Subordinate leaders are generally closer to tactical problems and are often in better positions to know more about a situation and how to respond to a given situation. Research into operational planning during World War II indicates that, as the war progressed and staffs became more experienced, the "degree of detail in the written plans decreased."[14] In determining why British Cold War planning documents for NATO missions were "one-third the length of those issued by U.S. NATO commanders in equivalent commands," observers found that British staffs focused on *problem-bounding*: "the mission(s) were offered to subordinates as problems, but much less detail was offered about how they would be solved."[15] U.S. staff officers should "bound" the problem set before they decide what to do about it.

Flexible planning in complex environments requires deductive reasoning to derive mission statements from ambiguity. The rationalistic decisionmaking models currently in use leave little room for creative and intuitive problemsolving. The MDMP, for example, presents a linear and sequential approach to problemsolving. Mistakenly used as a checklist, it an-

alyzes problems by reducing them to components, sometimes neglecting key relationships among them. The exigencies of small-unit combat, such as in Iraq and Afghanistan, against irregular forces evoke the individual leadership values of initiative, self-reliance, and mental agility. In combat scenarios, it is through trial and error that leaders come to know the particular properties of the various actors. Learning institutions can apply this knowledge to future operations and thereby enhance an organization's understanding and experience. Military history, education, experience, and personal judgment help fill the gaps which are left by institutional learning. Theory helps provide the insight into future experimentation to learn more lessons.

The application of lessons learned, often during real-world missions, links formal education to experience. This synthesis is critical in leader development and more important than creativity. Gary Klein, in *Sources of Power: How People Make Decisions*, claims that problem definition remains the key skill in planning, "In most domains, we need not off-the-wall creative options but a clear understanding of the goals."[16] Maintaining this sense of purpose, derived from analyzing lessons learned, then becomes the primary focus of a successful military organization. Unfortunately, this task is easier said than done.

Bureaucrats have found that it is easier to fix technology than reform people and patterns of thought and behavior. Perhaps it is human nature to reach for what is readily available to address poignant issues, but throwing money at defense problems has not resulted in long-term solutions. While new technology can enhance soldiers' lives and assist in mission ac-

complishment, only air-breathing individuals can decide what and how that technology will be employed. Human thought and behavior, however, do not formulate along the lines of product life cycles and budget projections. They are developed over time through formal (institutional schooling) and informal (mentorship, lessons learned, field experience) learning. Dietrich Dorner, a noted psychologist, explains that simulations can provide a valuable medium to train people to learn from their mistakes in complex situations, "what is often called 'systemic thinking' cannot be regarded as a single unit. …It is instead a bundle of capabilities, and at the heart of it is the ability to apply our normal thought processes, our common sense, to the circumstances of a given situation. The circumstances are always different! At one time this component will be crucial, at another time that component. But we can learn to deal with different situations that place different demands on us. And we can teach this skill, too — by putting people into one situation, then into another, and discussing with them their behavior and, most important, their mistakes. The real world gives us no chance to do this."[17] Through repeated exposure to situations of varying intensity, context, and decisions, professionals can evolve to become flexible leaders.

Decision TTP — An Example

Dorner invites us to ponder a fundamental issue in military education: is it *what* future leaders learn or *how* they learn? Is it both? If the MDMP, a linear, rational decisionmaking model, is too complicated to facilitate problemsolving in the contemporary operational environment, then does it need to change? Conversely, if there is a questionable pedagogy in military education, can leaders update it? While this issue merits continued debate, tomorrow's military leaders require adequate training and education *now*. Changing the doctrine of planning and decisionmaking would be an involved and lengthy process. The process would take too long to effectively influence contemporary leader development — altering how lead-

ers currently regard the process of subordinate development may have purpose.

Staff organizations that foster open-minded environments and creative problemsolving help develop innovative leaders. Junior leaders can effectively learn through repeated exposure to ambiguous scenarios that challenge their knowledge of doctrine, their assessment of current capabilities, and their ability to develop and communicate coherent plans. The staff training exercise is an example of a self-directed staff exercise that, based on individual abilities, would require minimal resources other than time and mental energy (see Figure 3). The long-term payback, if integrated into a long-range, self-assessed training program, would be immeasurable — agile thinkers who can effectively lead military forces to counter any challenge.

The necessary end state of transformation is developing joint leaders who are critical thinkers and agile problemsolvers. Their learning will entail exposure to rational decisionmaking models, such as the MDMP, as well as to scenario-driven, intuitive training with simulations and contingency planning. The collective experience and learning will naturally transmit to generations of adaptive leaders.

Current leaders can help develop innovative, mentally agile, and self-reliant leaders of the future through professional learning. Transformation must occur in the way the institution's personnel think and behave — that is, more open-mindedly and innovatively. In a world of increasingly scarce resources and greater demands on the U.S. military, developing expert learners is critical. Three factors were identified that address this introspective process: expectations and the modern security environment; the Army as a learning organization; and institutional education providing a necessary link between personal experience and leader development.

Learning is the nexus where the U.S. military can most effectively influence how leaders think, decide, and act. This has significant implications for institutional reform:

➢ *Critical thinking is a key skill set*. Critical thinking, a process of rationally applying the logical analysis of facts, effectively links creativity to realistic lessons learned to develop innovative leaders. The military education system must nurture this skill along with a problem-bounding approach in future leaders.

➢ *A joint education system* must emphasize service capabilities rather than separate roles. The integration of representatives from Active and Reserve components, officer and noncommissioned corps, and from other agencies is essential for realistic education and training to occur. The resultant interaction would serve as an operational model for allied and coalition participation.

➢ *Increase the emphasis on transforming patterns of thought rather than technology*. Once the former is accomplished, the latter can follow; the reverse poses a more difficult path.

➢ *Do not forget common sense*! It applies a layer of perspective on problems.

One result of service transformation has been the widely advertised expansion of technological development and its doctrinal implications. Another, more difficult, and slowly gestating reform will incorporate that of human behavior and patterns of thought. In that realm, the U.S. Army would best invest in *learning*, a means to an essential end.

Notes

[1]U.S. Army Field Manual (FM) 22-100, *Army Leadership*, U.S. Government Printing Office (GPO), Washington, DC, August 1999, p. 1-4.

[2] Ibid., p. 5-14, paragraphs 5-75 and 5-76. Figure 1 also reflects Figure 5-4 in the manual.

Staff Training Exercise:

Purpose: To help assigned officers/NCOs develop critical thinking skills while practicing military planning for upper-echelon staff work.

Concept: This exercise provides young staff officers and NCOs (working together) an opportunity to practice military planning, decisionmaking, and critical thinking in an historical context. The exercise takes no longer than 10 hours and involves no formal products. The emphasis is on the critical thinking process — what staff personnel get paid to do. The exercise agenda, outlined below, can take place over 1 or up to 3 days, depending on time available.

References: Attached articles and scenario. Attach an article or extract that describes a realistic problem that needs to be solved at the appropriate level. Examples could be river crossings, humanitarian assistance, moral dilemmas, and ambushes. There are several situations that junior leaders today face in Iraq and Afghanistan that challenge their courage, knowledge, and limited materiel. For Army MDMP, use FM 5-0, *Army Planning and Orders Production*; and FM 3-0, *Operations*. For Joint Operations Planning Execution System (JOPES) crisis action planning, use Joint Publication (JP) 5-0, *Doctrine for Planning and Joint Operations*; and JP 3-0, *Doctrine for Joint Operations*.[18] For further development, see Richard Paul and Linda Elder's *Critical Thinking*.[19]

Agenda:

Day 1 (2 hours). Issue practical exercise to immediate staff. Have them read the scenario and answer critical questions, such as what went wrong with leaders' situational understanding; what were the leaders' expectations and why; did the enemy change their initial plan, if so, why; and what was the status of other available resources? Discuss results. Discuss situational awareness, branches, and sequels. Discuss MDMP/crisis action planning (CAP). Assign a participant to get basic history of the subject campaign.

Day 2 (4 hours). Give the staff a sample order from higher headquarters (unclassified).

Conduct MDMP/CAP, as appropriate, to give an oral brief — no slides, but butcher block is fine — during the last hour. The object is to limit the planning and briefing time to focus on the process, not products, and avoid getting mired in details. Encourage the group to consider branches. The instructor will remain with the group to answer requests for information and to elicit lessons learned from experience.

Day 3 (3 hours). Makeup training; one-hour tactical problem. Assign a student leader and observer; do not constrain with a specific planning process. The task is to solve the problem in a time-constrained environment. In what additional ways can staff leaders get the guidance they need from higher headquarters? Lesson learned: thinking under pressure in a team is a key skill. AAR-type feedback, disseminate to participants, and file in continuity book.

Figure 3

Route Ownership versus Route Concession

by Captain Robert B. Gillespie

Logistics operations are simultaneously the least sexy, yet most fundamental, of combat operations. Without the efficient and rapid movement of supplies and combat service support (CSS) elements throughout a theater of operations, the U.S. Army would be incapable of even the simplest tactical operation. Yet, combat arms leaders often place secondary emphasis on planning and executing logistics operations. From the curriculums of the Armor Officers Basic and Armor Captains Career Courses onward, logistics are given only cursory attention in comparison to the intense focus given to tactical combat arms operations. The end result of this shortchanging of logistics planning is poorly executed CSS operations that constrain friendly tactical operations to a far greater degree than do the effects of enemy action. This is especially true on the nonlinear battlefields we see in Iraq and Afghanistan, where support units are as much on the front lines as combat arms elements. There are effective methods for conducting CSS operations in these high-risk areas that often go unused. We must own the routes we decide to use and view CSS operations in the same light we view combat operations: with the goal of maintaining the initiative and friendly freedom of maneuver.

As the executive officer (XO) of A Troop, 1st Squadron, 17th Cavalry, 82d Airborne Division, during Operation Iraqi Freedom, one of my unit's primary missions was convoy security in the Al-Anbar region. Our forward operating base (FOB) also served as the 82d Airborne Division's rear command post (D-Rear) and we completed over 150 missions in support of D-Rear, averaging over 10,000 miles per high mobility, multipurpose wheeled vehicle (HMMWV).

While our platoons routinely traveled to the Jordanian border crossing in the west and to Baghdad in the east, our primary security concern was the area between the cities of Ramadi and Fallujah in the heart of the Sunni Triangle. All of our enemy contact took place between Ramadi and Baghdad, and the overwhelming majority solely between Ramadi and Fallujah, a distance of less than 40km by highway. Despite the best intentions, we had fundamental failures in the division's planning and execution of CSS operations. We had an underlying defensive and reactive mindset that granted the enemy a steady stream of psychological victories

and allowed him to gradually restrict our movement throughout our area of operation (AO). We conceded our routes instead of owning them, a mistake from which other units can learn.

Once established in our AO, we conducted a thorough pattern analysis of the main supply routes (MSRs) and alternate supply routes (ASRs) throughout our AO, dividing each route into distinct segments between villages or key intersections. We then assessed each segment as green, amber, or red, based on the number of incidents of enemy contact that had occurred along that segment in the past week. Any convoy was authorized to travel a green route, while amber routes required a convoy to have an armed security element. Only authorized combat arms units on specific missions, such as patrols, cordon and searches, or raids, were permitted to travel red routes; CSS convoys were not authorized. This system was designed to minimize the risk of CSS convoys making enemy contact.

This seemingly simple process had one fatal fallacy. Since only combat arms elements could travel a red route, and most combat forces remained in the cities where their FOBs were located, there was virtu-

ally no coalition presence on a red route, as long as it was red. With no friendly forces traveling the route, no enemy contact was possible and none was reported; therefore, the route would automatically revert back to amber within a week of its turning red. Yet nothing in terms of enemy locations or activity changed; only our traffic on the route. The result was that problematic routes would constantly alternate between amber and red. Once we had changed a route's status back to amber due to a lack of recent enemy contact (while no one was traveling on it), the first several convoys to take the route would frequently encounter improvised explosive devices (IEDs) that had been emplaced while the route was red. The route would revert back to red and the cycle would repeat.

The key routes between Ramadi and Fallujah continuously alternated between red and amber due to the sustained level of insurgent activity in the Al-Anbar region. In a search for green routes between the two cities, we planned new routes that would be green by default as they had never before been used. Instead of continuing to travel through known hostile areas, we shifted our routes to areas that were seemingly free of enemy activity. Unlike relatively well-built Highways 1 and 10 that easily handled heavy vehicles and minimized travel distance between cities, these new routes were usually rural two-lane roads that were often not paved, adding considerably to travel distance and time. For example, traveling the highway that ran between the adjacent towns of Habbaniyah and Ramadi took less than 30 minutes. The replacement route involved traveling broken-up pipeline roads that more than tripled the distance, increasing travel time to over two hours.

Traffic between Ramadi and Baghdad that had originally taken the highway directly between the two cities was forced to go southeast to Iskandariyah and then north to Baghdad. This again not only increased the distance, but took convoys over some very poor-quality roads. The M915-series tractor-trailers and their civilian contracted equivalents had a difficult time over many of these new routes. These new routes increased travel time for convoys and increased class-III and maintenance requirements from the increased distances and more austere roads. More seriously, these routes increased the amount of time that soldiers were exposed to enemy contact.

Even a cursory consideration of the enemy could have predicted these results. The number of attacks on these new routes quickly matched the levels seen on the old routes, despite the onerous increases in distance and travel time, as well as the additional hazard of taking heavy trucks down narrow, poor-quality roads. This led to a continuous cycle of new routes, each longer and more detoured than the last, in search of a route that would remain free of attacks. Yet, every new route would only remain green for a few weeks before the number of enemy contacts returned to previous levels. We were facing a highly mobile and decentralized enemy whose task was to locate and attack soft targets — CSS elements.

It was obvious that insurgents would quickly identify new logistics routes by the sudden surge in supply convoy traffic and shift their attacks accordingly. The enemy would move to where he could be most effective — where he could find a large number of exposed CSS elements. The new routes only served to take convoys further away from the FOBs and increase the amount of time they spent traveling through seldom-patrolled areas. We had collected a great amount of data about what the enemy was doing, but we never conducted the fourth step of IPB — determining the threat courses of action. We failed to factor in the enemy's objectives and desired endstate.[1] His obvious endstate was to deny us access to the areas in which he was active — and we let him achieve it. We did not think realistically about how the enemy would

fight, and this omission resulted in us creating new routes that unintentionally increased the risk to our soldiers.

Our mission statement emphasized offensive operations to create a secure environment, yet our CSS operations continuously served to give the enemy the initiative. We encouraged and motivated the enemy to further attack our logistics convoys by allowing ourselves to be repeatedly "chased" off of supply routes. As the enemy saw his efforts being rewarded by our routes being displaced further out into rural areas, he could do nothing but view his attacks as being successful and having tangible effects on coalition operations. We allowed the insurgents to determine where we went, instead of imposing our will on them. We gave them the initiative and they used it to deny us access to highways and major arteries. It was obvious to local inhabitants (sympathetic or otherwise) that we were not in control — insurgents owned these areas. Without local confidence in coalition forces, our ability to collect intelligence and improve security in these areas was severely limited. Morale throughout the troop sank as even the lowest-ranking soldiers could discern why the routes they were driving were changing, which caused frustration to grow, knowing that we were giving in to the insurgents' goal of denying us use of the MSRs. We could not maintain freedom of maneuver in our own AO.

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In retrospect, the methods A Troop used would have been much different. We would have conducted a continuous route security operation over key routes. During several screening missions, we observed that it takes several hours to emplace an IED; a well-executed route security mission would prevent that opportunity. U.S. Army Field Manual 17-95 discusses in detail how a cavalry squadron should conduct such a mission.[2]

Due to lack of available maneuver forces, a squadron-sized security element may not be feasible in many situations. A troop-sized element could secure a short, but critical, route segment, such as Highways 1 and 10, which ran between Ramadi and Fallujah, assuming another unit provided a sufficient (company-sized) reaction force. Engineer support is invaluable for clearing and grading road shoulders. Improving road shoulders makes rapidly identifying IEDs much easier, since it is difficult to mask the disturbance of graded sand or mud that occurs during IED emplacement. Troop scout platoons would have continuously patrolled the route, preventing the emplacement of IEDs and maintaining freedom of maneuver over the extent of the MSR. When we were able to conduct a route reconnaissance mission prior to convoys passing over a route, our platoons found IEDs emplaced on the route each time and secured those locations prior to a convoy striking them. The constant combat arms presence on the route would deny IED placement opportunities.

A sound pattern analysis of attempted and successful IED emplacement would identify where and when to most effectively conduct cordon and search or ambush operations. The troop would emplace observation posts (OPs) overwatching key intersections, cloverleafs, or areas of frequent or likely IED activity. The sniper teams organic to Stryker and light brigade combat team (BCT) reconnaissance, surveillance, and target acquisition (RSTA) squadrons are ideal assets for this mission. While making a stand on a route might temporarily spike insurgent activity, persistence in maintaining the route would pressure insurgents to find a more vulnerable target. Proactively ensuring freedom of maneuver along an entire route is more effective than reactively protecting individual convoys. The end result would be coalition forces maintaining the initiative, sending a signal to local nationals (both friendly and hostile) that we have both the will and means to control routes in our AO. CSS elements would be free to move rapidly from FOB to FOB along high-quality roads free from IED threats. Soldier morale and confidence would be stronger and insurgents would not be encouraged by our apparent retreat from areas in which they operate.

From A Troop's collective experience, the only effective means to secure lines of communications in an area of heavy insurgent activity is to actively secure the route, using screens, patrols, OPs, cordon and searches, and ambushes as appropriate. MSRs and ASRs must be seen to be key terrain, and securing them from enemy interdiction must be made a priority when allocating forces to various missions. Combat arms units must make route security a priority; not an afterthought to the "sexier" missions they would prefer to perform. This offensive approach to CSS operations ensures units maintain freedom of maneuver in their AO. It minimizes exposing support units to enemy contact. It gives local coalition sympathizers confidence that we control the terrain in which we operate, and therefore enhances intelligence collection. In conjunction with properly executed IPB, to include an honest look at the situation from the enemy's perspective, this is a powerful, yet simple, paradigm for ensuring the security of CSS convoys. It works; it saves lives and sends the right message to the enemy.

Notes

[1]U.S. Army Field Manual (FM) 34-130, *Intelligence Preparation of the Battlefield*, Department of the Army, U.S. Government Printing Office (GPO), Washington D.C., 8 July 1994, p. 2-40.

[2]FM 17-95, *Cavalry Operations*, Department of the Army, U.S. GPO, Washington D.C., 24 December 1996, p. 4-46.

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Establishing an Arab Democracy: Lessons Learned from the Six-Day War

by Captain Daniel Ganci

On 1 May 2003, President George W. Bush declared the end to major combat operations in Iraq. Since then, the United States and its allies have engaged in a costly fight with a growing insurgent force. Today's political and military situation in the Middle East represents the latest rendition of an old and sadly familiar story. On 10 June 1967, Israel's Prime Minister announced the end of what would be known as the Six-Day War only to begin a war against insurgents that is still fought today.

The Six-Day War in June of 1967 shaped, and continues to influence, politics in the Middle East. The war pitted the young nation of Israel against the Arab armies of Egypt, Syria, and Jordan, as well as other Arab countries. The conduct of the war provides insight into Israeli and Arab cultures and the political effects of ongoing insurgent and terrorist acts, resulting in global implications. The war legitimized Israel as a nation and regional power. It highlighted the difficulties that existed between the Arab States of the Middle East and demonstrated the advantages of democracy over monarchy.

The effects of the Six-Day War also influence and, in some ways, mirror the United States' current involvement in Iraq. In both cases, a democratic or western nation dominates the Arabs militarily and then undertakes an ongoing period of unconventional fighting. There are also similarities on the operational and tactical levels between the Six-Day War and Operation Iraqi Freedom (OIF).

This article provides insight on the current situation in Iraq and its future. This article analyzes the Six-Day War using the nine principles of war and assesses whether the Israelis won the war or the Arabs lost it.

Nine Principles of War

Before an effective analysis of the Six-Day War can be conducted, the criteria must be defined. The nine principles of war provide general guidance for conducting war at all levels. They are not a checklist and do not apply the same in every situation. However, they summarize the characteristics of successful operations and serve as a powerful analytical tool.[1] The principles are: objective, offensive, mass, economy of force, maneuver, unity of command, security, surprise and simplicity.

Objective. The objective principle of war is important at all levels of war and should drive military activity. Commanders need a clear understanding of the expected outcome and impact of every mission.[2] When developing objectives at the strategic level, political considerations and even global opinion need to be considered. The

Arab coalition of Egypt, Syria, and Jordan, and the Israelis had clear strategic objectives. The Arabs wanted the total destruction of Israel as a nation, while Israel wanted to create a secure nation-state. Both of these objectives could only be achieved through a mix of political and military actions.

The Arab coalition wanted Israel to strike first, appearing as the aggressor in the eyes of the world and justifying an overwhelming military response. They attempted to achieve this in May 1967 by massing forces in the Sinai and on the Jordanian and Syrian borders; they also closed the Straits of Tiran, effectively cutting off a major supply line for Israel. These actions created an untenable situation, both politically and militarily, for Israel without firing a shot. The Israelis, aware of the danger, but not wanting to win the military war only to lose the peace politically, exercised restraint while desperately trying to get the United Nations/United States to peacefully intervene. In the end, Israel demonstrated to the United States and the world that their nation was under attack and needed to act to survive in support of their strategic objectives.

Israel wanted to create a secure state, one that the Arab world officially recognized. They achieved this mission by demonstrating to the world that their national security was at risk and action was needed. Israel also understood that "their success would be judged not on the number of tanks destroyed, but on the size of territory seized."[3] Israel's plan was to not only cripple the Arab armies, but also gain valuable land. The land allowed for defense in depth and could also serve as a

bargaining tool for peace treaties when the fighting stopped.

The differences in these supporting objectives help us begin to understand how a nation outnumbered almost three to one was able to achieve a decisive victory so quickly. Arab political leaders never established military objectives for their armies. Egypt's plan was to wait in the Sinai for Israel to attack and then destroy them with a counterattack. However, even this broad objective was never clearly established. Lieutenant General Anwar al-Qadi, chief of operations on the Egyptian general staff, testified that their headquarters knew nothing about any planning or strategic objectives.[4] Another Egyptian general stated that even as forces were moving out of Cairo into the Sinai (to unfinished defensive positions) the highest army leaders were asking, "What is our mission?"[5] Even the Egyptian foreign ministry was forced to operate without any briefings or appraisals.[6] This lack of focus plagued all levels of the Arab coalition, as well as provides a great deal of insight into the reasons for their failure.

The Arabs may not have had supporting objectives, but Israel was forced to come up with new ones throughout the war as they quickly achieved the original ones. When the war started, Israel focused on destroying the Arab air force by gaining air superiority and quickly knocking Egypt out of the war, forcing the other Arab states to reconsider attacking. The first objective was achieved in the opening hours of the war. It is estimated that 400 Arab planes were destroyed with minimal losses to Israel. The second objective was essentially achieved by the end of the second day when "Egyptian

leaders ordered a wholesale and disorganized retreat of the Sinai."[7] Once Egypt was no longer a threat, Israel focused on seizing Jerusalem and the West Bank from Jordan. When that objective was achieved, Israel turned its attention to the Golan Heights in Syria. Israel's ability to establish clear and attainable objectives for its military helped focus their efforts and achieve victory.

Offensive. The offensive principle of war is key for achieving decisive results.[8] Offensive actions are taken to dictate the nature, scope, and tempo of operations. Offensive operations force the enemy to react.[9] The Arab coalition initially demonstrated offensive intentions in the months leading up to June 1967. In May, they moved forces into attack positions along Israel's border and they closed the Straits of Tiran, isolating Israel from essential supplies. The highest Arab leaders publicly condemned the existence of Israel and talked about the coming day when the Arab world would drive the Jews into the sea. However, the Arab army lost the initiative when Israel attacked first and never stopped attacking. Israel planned to start their offensive "with a surprise attack against Egypt and then fight Syria and Jordan as necessary."[10] The Israelis pressed the attack for six days; shifting forces around the battlefield to open new fronts, pushing their air force to fly sortie after sortie in support of ground attacks, constantly attacking and seizing ground. This intense pressure created havoc with the Arab's attack plans and forced them to react to Israel's every move. The Arab coalition was unable to conduct effective offensive operations once the war began.

Mass. The mass principle is achieved when a unit concentrates effects of combat power at a decisive place and time.[11] This is another principle of war that Israel performed better than the Arabs. Israel's theater-level battle plans focused on isolating small sections of the Arabs' large and complex defensive positions

and then defeating the fixed enemy in detail. This plan of attack is clearly demonstrated by Arik Sharon's attack on the Umm Qatef's defenses. This was a small portion of a much larger defense in the Sinai. Sharon used field artillery and paratroopers to attack from the rear, cutting off reinforcements and isolating the outpost. He then attacked the isolated defense with infantry and armor from different axes. This pattern of attack allowed the Israeli army to bring numerous pieces of combat power to bear on isolated pockets of Arab units.

The Arabs, even with superior numbers, were unable to mass the effects of Israel's combat power. This is not to say that their soldiers did not fight. The complex defenses on each of the fronts were well defended and exacted a heavy price from Israel's soldiers. It appeared that Arab military leaders could not focus their efforts. The tempo of war was the biggest factor that prevented them from massing. The Arabs had anticipated a slow, drawn-out slugging match, not the lightning-quick modern war that Israel conducted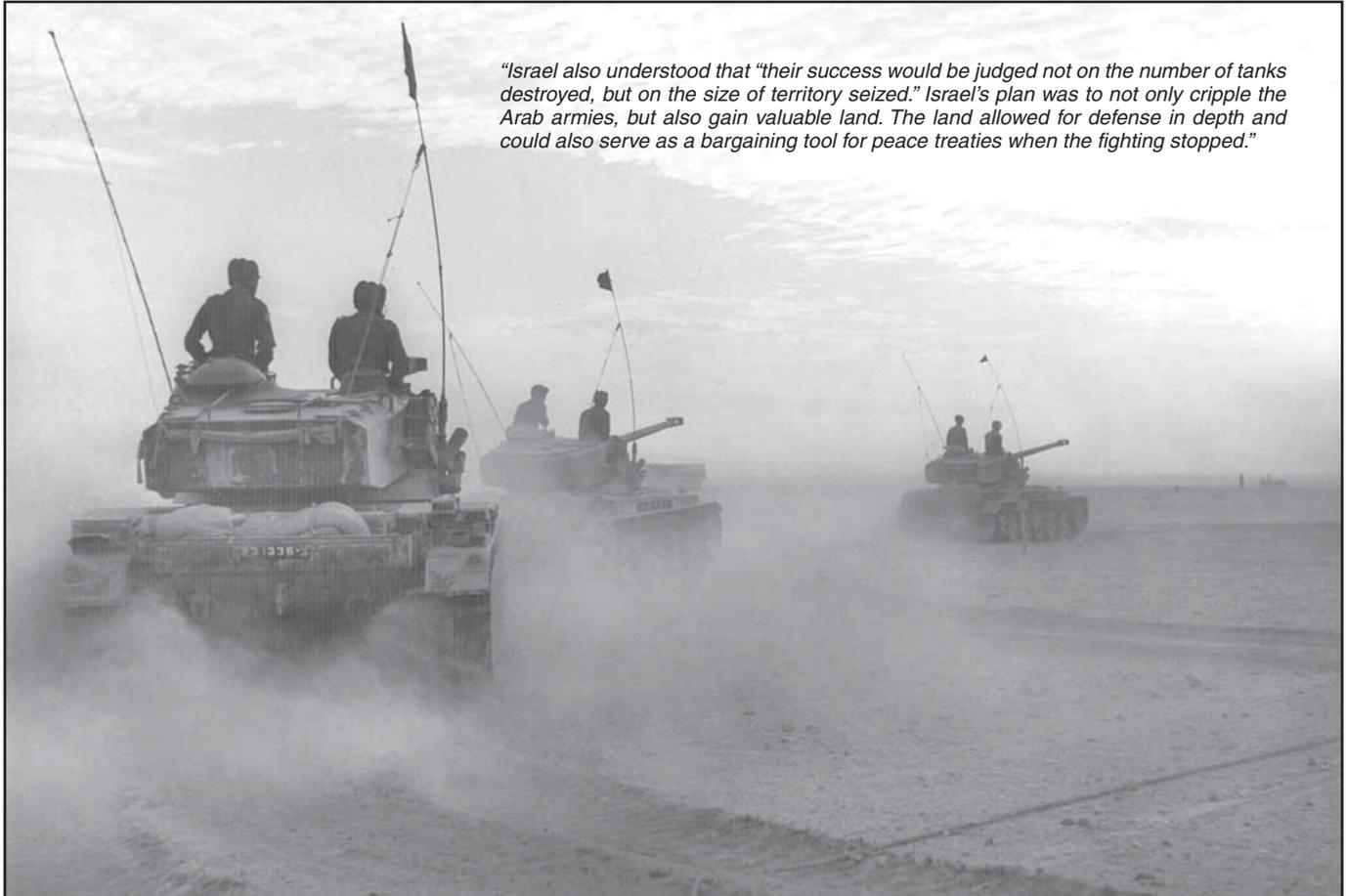. There are also examples of the Arabs ignoring the importance of massing forces before the war even started. When setting the defenses along the Jordanian-Israeli border, "nine of eleven brigades were spread out in villages and towns."[12] This deployment was driven by politics rather than military considerations and cost the Jordanians dearly when Israel focused their attack on the West Bank and Holy City.

Economy of force. The fourth principle, economy of force, is the reciprocal of mass. The principle is achieved when commanders accept prudent risk on one area to achieve superiority in another more decisive area.[13] It appears that economy of force was never a consideration for the Arab coalition. They enjoyed almost a three-to-one ratio over Israel in terms of equipment and manpower. There were three separate armies (Egyptian, Syrian, and Jordanian) as well as external military support from numerous other Arab countries (Lebanon and Iraq) that combined to make up the larger Arab army.

The Arab's plan called for supporting attacks in three different places for different objectives, with the different air forces supporting ground attacks. The Arab army's main effort was with Egypt in the Sinai, but Egypt had the largest army and additional support from other allies was not needed or was unwanted. Israel, on the other hand, was forced to make difficult decisions on the commitment of military units. Israeli leaders decided that the Sinai was the decisive front and committed the majority of their forces (including ammunition) there, leaving the central and northern front practically defenseless. Israel defended the Tel Aviv area with only 50 Sherman tanks and 36 cannons against the entire Jordanian army. General Narkiss told an Israel Defense Force (IDF) review board that "the security of the central sector was based on miracles."[14]

As the Sinai campaign developed far better than expected, units were shifted from the south to the central and then northern fronts. Israeli leaders were forced to make economy-of-force decisions. They took a tremendous gamble on the northern and central zones, but the gamble paid off when a quick victory in the south allowed military commanders the freedom

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to redirect units to other fronts as the war developed and the decisive point changed.

Maneuver. The maneuver principle involves placing the enemy at a disadvantage through flexible application of combat power.[15] Maneuver happens at all levels of war and is conducted by the lowest platoon to the highest army. The Arabs demonstrated their ability to conduct maneuver when Egypt remilitarized the Sinai. This action placed Israel in a very difficult position, because Egypt could now dictate the time and place of confrontation while simultaneously limiting Israel's power of deterrence.[16] This was a brilliant political and military move by the Arabs.

To survive, Israel needed to strike first, regardless of political consequences, and the Arabs were now in an excellent position to counterattack. However, Israel outmaneuvered the Arabs, both politically and strategically, by portraying Egypt as the aggressor. They gained permission (though not open approval) from the UN and U.S. to attack in self-defense. Once the war started, Israel dominated the Arabs consistently, placing them at a disadvantage.

The tremendous success of the air campaign set the conditions for a successful ground campaign and placed the Arab armies at a distinct disadvantage. The ground campaign focused on seizing key locations in the rear areas of defensive positions while avoiding frontal assaults whenever possible. In the Sinai, there are numerous accounts of the Israeli army moving through terrain that the Arabs thought was impassable and attacking and isolating enemy positions. While in the central and northern zones, Israeli forces bypassed fortified areas and seized terrain that allowed them to dominate operations in the area by cutting off reinforcements and fixing the enemy in their initial defensive positions.[17] The Arabs "were ill prepared for Israel's unconventional approach from the sea and through the sands."[18] Once the war began, Israel seized the initiative, putting its strengths against the Arabs' weaknesses and forcing the Arab coalition to deal with numerous unforeseen dilemmas.

Unity of command. The importance of the unity of command principle was clearly demonstrated during the Six-Day War. This principle is achieved when there is one clear commander for every objective. This is important because unity of command allows for unity of effort.[19] The Arabs made some effort to achieve this prin-

ciple. Jordan and Egypt worked closely together before the war and Jordan allowed an Egyptian commander to lead its army; however, Syria refused to coordinate with Egypt.[20] This lack of coordination would handicap the Arab coalition throughout the war, but Syria was not the only country at fault.

Egypt's military commander altered the command structure in the Sinai. This new structure essentially created six new levels of military bureaucracy through which orders and reports needed to filter.[21] The new structure was a result of a power struggle between Egypt's political and military leaders. Israel, on the other hand, had a clearly defined chain of command from top to bottom. This streamlined hierarchy provided Israel with flexibility and speed of execution. The Arab system created mass confusion at all levels in its army (units would receive different and conflicting orders) and between allies (leaders were telling outrageous lies about their achievements for two days).

The lack of unity in the Arab army is not surprising when you look at the individual governments. Each Arab nation was a monarchy or dictatorship. In this form of government, a unified army, run by intelligent and independent people, represents a clear threat to the ruling party's power.

This situation was compounded by a general distrust between the Arab leaders. The Arab army lost its ability to unite long before the war started and the effects on the battlefield were devastating.

Security and surprise. The principles of security and surprise worked hand-in-hand for this war. Security is accomplished when commanders deny the enemy the ability to acquire an unexpected advantage.[22] Surprise is achieved when commanders strike the enemy in a time, place, or manner for which they are unprepared.[23] Both sides initially failed to achieve security. Israel took a tremendous (albeit necessary) risk by leaving the central and northern zones essentially defenseless to focus on the southern zone. The Israelis compensated for this security failure by attacking first and never relinquishing control of the war.

The Arabs sacrificed their security when they failed to acknowledge the threat of an Israeli surprise attack and take actions to protect themselves. This lack of preparation cost the Arabs their air force and the ability to control the war. The planes were left in range of Israel's air force and parked on open runways, rather than in protective hangers. In fact, there was no effort to even hide the planes; Israel knew the exact location of the enemy air force,

"Who won or lost the Six-Day war is a difficult fact to establish. At first glance, Israel appears the clear victor — the Israeli army seized key terrain on all fronts, providing the nation with security; it occupied ancient holy cities that were important to its people; and crushed the conventional armies of its Arab neighbors, establishing Israel as a legitimate power in the region. Israel inflicted a tremendous blow to the Arab world in terms of manpower and military equipment with far less self-damage than it had any right to expect."

down to individual jets.[24] These blatant security failures are incredible, considering that the initial intent of the Arab army was to force Israel to strike first.

When Israel began its air campaign, the Arab air force was completely surprised and most of their planes were destroyed on the ground. Israel also achieved surprise during the ground campaign. Prior to the war, Israel conducted numerous deception operations, which caused confusion in the Arab ranks. When the war started, key Arab leaders and ground commanders were away from their posts, and there are several accounts from all fronts of Israeli armored columns attacking through terrain that the Arabs had considered impassable and therefore ignored.[25] Both sides took dangerous gambles with security, but only Israel took advantage of the situation by maximizing effects of surprise. Israel's ability to continually surprise the Arab army on all fronts prevented them from taking advantage of Israel's security shortfalls in the northern and central zones.

Simplicity. The ninth principle, simplicity, is achieved through clear, uncomplicated plans and concise orders that all units can understand.[26] Israel achieved simplicity because of its streamlined command structure and preplanned operations for each front. Even as the war progressed and objectives changed, the Israeli army reacted quickly because of training, good situational awareness, and an understanding of desired objectives at all levels.

The Arab coalition ignored the importance of simplicity from the very beginning. Arab political leaders had difficulty working together and even misled each other on numerous occasions about the military situation. The chain of command was complex and would have caused confusion under the best circumstances — units would receive conflicting orders, higher headquarters was unaware of developing situations, and there was little to no coordination across the different fronts. The apparent lack of clarity on all levels of the Arab army handicapped its ability to adapt to the fluid style of fighting that Israel used and that characterizes 20th-century mounted warfare.

The Outcome

Who won or lost the Six-Day War is a difficult fact to establish. At first glance, Israel appears the clear victor — the Israeli army seized key terrain on all fronts, providing the nation with security; it occupied ancient holy cities that were im-portant to its people; and crushed the conventional armies of its Arab neighbors, establishing Israel as a legitimate power in the region. Israel inflicted a tremendous blow to the Arab world in terms of manpower and military equipment with far less self-damage than it had any right to expect. The victory was so astounding that the IDF ignored many of its shortcomings and credited itself with achievements that were more the result of Arab negligence, lack of coordination, and poor command.[27] Israel fought a good fight and demonstrated a better application of the principles of war than did the Arabs. However, things would have been very different if the Arabs had not overestimated their own strengths and underestimated Israel's ability to defend itself. The Arabs learned from these mistakes and attempted to make changes. This is clearly seen in the opening phases of the 1973 War where the Arabs gain a quick advantage because Israel underestimated them.[28]

The Middle East Today

The world continues to feel the effects of the Six-Day War. This war legitimized Israel as a nation, but at the same time, spurred the rise of the Palestinian national movement in the form of the Palestinian Liberation Organization (PLO).[29] The PLO understood that it could not fight Israel conventionally, so it embarked on an unconventional/insurgent campaign that continues today.[30] The Six-Day War also redefined the Arab's perception of the western world. Until this war, the Arabs considered the western world to be Europe, particularly Britain.

During the war, there was a tremendous amount of anti-U.S. sentiment, which was caused in part by a lie that Arab leaders spread throughout the region about U.S. aid to Israel; it did however, represent a new understanding of the United States' growing power in the world.[31] Today, the United States is seen as the "Great Satan," an exploiter and seducer of Arab life, and is forever linked in Arab minds to the abomination that Israel represents.[32] This perception creates an incredibly challenging political and military situation between the U.S. and the Middle East.

The war between the United States and Iraq and the resulting insurgent attacks have many similarities with the conduct and aftereffects of the Six-Day War. On an operational level, Israel's attack on Umm Qatef and the United States' attack on Baghdad, share many of the same characteristics. In both cases, you have a mobile army massing and maneuvering against static defensive positions. The Israelis attacked Egyptians relying on intensely fortified battle positions in the Sinai, and the United States attacked Iraqi Republican Guard units entrenched in an urban environment.

The IDF in 1967 and the U.S. coalition in 2003 countered these defenses by isolating the enemy and then massing effects of combat power from numerous directions. The IDF and U.S. forces used paratroopers to prevent enemy forces from repositioning and then used a combination of armor, infantry, and field artillery to close with and destroy respective enemies. There are also similarities in the Israeli and U.S. air campaign. Both sides established total air superiority early in the war. This air superiority allowed respective air forces to focus efforts on assisting the ground campaign. Total air superiority played a pivotal role in Israel's success in 1967 and provided a combat multiplier to the U.S. coalition in Iraq in 2003.

There are many tactical lessons that can be learned from Israel's conduct of the Six-Day War. However, today's concern is focused on how to fight an unconventional enemy using conventional forces. Israel has fought an unconventional enemy for over 40 years and has learned many hard lessons. One of the more important lessons is using armor in an urban environment. The idea of bringing a tank into a city was taboo in the U.S. Army for years. It is true that a pure tank force in an urban environment faces some severe limitations. However, the Israelis have used armor in urban environments from the beginning of their war with insurgents. The Israelis even created a tank (Merkava) specifically designed for urban fighting.

The U.S. Army needs to learn that the advantages of survivability, shock effect, and firepower that come from using an armored force correctly in an urban environment far outweigh the dangers. Another tactical lesson that we can learn from Israel's experience with insurgents is the close cooperation between infantry and armor units at the lowest levels.

Urban fighting is the most difficult type of fighting today. It is characterized by quick, violent, and close fights with long periods of intense stress. The urban fight is predominately an infantry fight; however, there are ways to increase the odds

The Law of War: The Rules

by Lieutenant Colonel David P. Cavaleri (Retired)

"This [the Global War on Terrorism] is a fight for the very ideas at the foundation of our society, the way of life those ideas enable, and the freedoms we enjoy."[1]

In their paper titled, "Serving a Nation at War: A Campaign Quality Army with Joint and Expeditionary Capabilities," coauthors R.L. Brownlee, former acting Secretary of the Army, and General Peter J. Schoomaker, Chief of Staff, Army, make two points quite clear — they believe the Global War on Terrorism

(GWOT) is a fight for Western values, and the current operational environment (COE) is driving the Army to make evolutionary changes.[2] One might argue those Western values deserve to be transformed.[3] Prominent among them is the collection of principles embodied in the Law of War.

The Law of War was written by theologians, jurists, academicians, diplomats, and others for use as a framework, a distinctly Western moral compass, as it were. Because the GWOT represents a cultural clash of global proportions, a troubling disparity about combatant conduct is emerging, prompting some to ques-

Have Not Yet Changed

tion the continued application of current Law of War principles. On 7 February 2002, President George W. Bush issued a memorandum in which he stated: "The war against terrorism ushers in a new paradigm. …Our nation recognizes that this new paradigm — ushered in not by us, but by terrorists — requires new thinking in the Law of War, but thinking that should nevertheless be consistent with the principles of Geneva."

Former Secretary of Defense, James Schlesinger, offered this recommendation from the *Final Report of the Independent Panel to Review DoD Detention Operations*: "The United States needs to redefine its approach to customary and treaty international humanitarian law, which must be adapted to the realities of the nature of conflict in the 21st Century. In doing so, the United States should emphasize the standard of reciprocity, in spite of the low probability that such will be extended to United States Forces by some adversaries, and the preservation of United States societal values and international image that flows from adherence to recognized humanitarian standards."[4]

One should take the time to address several questions before joining this controversial debate.

Understanding the Law of War

"It can only be the earnest desire of all men of good will to ensure that this Convention is made to work in accordance with its tenor."[5]

This quote refers to the *Geneva Convention Relative to the Protection of Civilian Persons in Time of War*, more commonly known as the *Fourth Geneva Convention of 1949*, or "*GC*." It might seem antithetical to expect combatants to conduct themselves as "men of goodwill" and adhere to humanitarian principles, and yet that was, and remains, the expectation upheld by a majority of nation-states. The current popularity of the topic requires the reader to address several basic questions. For example: why regulate war; assuming intent to regulate war, then what is the Law of War; what is the purpose of the Law of War and what are its unifying themes; and finally, how is the Law of War triggered?

This article is designed to help the reader draw conclusions about the Law of War's applicability in the face of contemporary challenges presented by the Taliban in Afghanistan, Ba'ath Party remnants and disaffected civilians in Iraq, the global al-Qaeda network, and the COE at large.

Why Regulate War?

Given the ramifications of a decision to wage war, is it not prudent to undertake it as violently, as efficiently, as horrifically as possible, applying, as it were, an "ends justifies the means" approach? Why did the Law of War ever evolve at all, since going to war is recognized as an accepted means of resolving conflicts? Perhaps because man is, at his very core, a rational being, and over time, he acknowledged the need to balance tactical military capabilities with strategic social harmony. Historian Peter Paret notes that 16th- and 17th-century writings on the subject of war generally fall into two categories: a collection of what he calls "pioneer" works in the field of international law and "pioneer" works detailing advances in military technology.[6] Before this period, conflict was generally characterized as unregulated warfare, subsequently embodied in what Paret characterized as Francis Bacon's "unabashed advocacy of unrestricted war."[7] But the societal backlash resulting from the Thirty Years War led to the advent of a group of men opposed to the unregulated destructiveness that typified war on the continent.

These men, the most famous being the Dutchman Hugo Grotius, advocated measures intended to protect private persons and their rights. They believed the law of nature contained fundamental precepts suited to how nations should be governed, and their works collectively endorsed one central principle described by Paret as being "that nations ought to do to one another in peace, the most good, and in war, the least possible evil."[8]

According to the U.S. Army's Judge Advocate General (JAG) School, efforts to formally regulate war can:

• Motivate the enemy to observe the same rules.

• Motivate the enemy to surrender.

• Guard against acts that violate basic tenets of civilization, such as protecting against unnecessary suffering/safeguarding certain fundamental human rights.

"It might seem antithetical to expect combatants to conduct themselves as "men of goodwill" and adhere to humanitarian principles, and yet that was, and remains, the expectation upheld by a majority of nation-states."

• Provide advance notice of the accepted limits of warfare.

• Reduce confusion and make identifying violations more efficient.

• Help restore peace.[9]

The Law of War

In *Handbook on the Law of War for Armed Forces*, author Frederick DeMulinen describes the Law of War as a collection of "international prescriptions on the conduct of combat and the protection of victims of combat."[10] Dr. Michael Walzer, Institute of Advanced Study at Princeton, refers to a "set of articulated norms, customs, professional codes, legal precepts, religious and philosophical principles, and reciprocal arrangements."[11] And the Department of Defense defines it as "That part of international law that regulates the conduct of armed hostilities. The Law of War encompasses all international law … including treaties and international agreements … and applicable customary law."[12]

The Law of War is derived from two distinct sources: it is based on unwritten rules that, over time, have come to be known as "customary international law," plus a collection of rules known as "conventional international law." The former are rules of conduct that bind all members of the community of nations, while the latter are codified rules that are binding as a result of express consent. To quote the U.S. Army JAG School, "Many principles of the Law of War fall into this [customary international law] category," while the term treaty (also convention, protocol, annexed regulation) "best captures this concept [conventional international law]." Analysis reveals three very important points. First, the Law of War consists of two distinct components. Second, the Law of War owes its current form and force to the evolution of custom and convention. And third, the customary aspect of the Law of War is equally essential to the overall construct as is its conventional aspect, because "once a principle attains the status of customary international law, it is binding on all nations, not just treaty signatories."[13]

Customary international law is defined by one source as a body of law resulting from a "general and consistent practice of States that is followed by them from a sense of legal obligation."[14] Major Timothy Bulman, writing in the *Military Law Review*, indicates that customary international law is formed by states following a "general and consistent practice, which is motivated by the conviction that international law requires that conduct." He further identifies two criteria that must be met: there must be an act or actual practice and states must believe they are acting under a legal obligation.[15] The important points concerning this source of the Law of War are: the body of customary international law consists primarily of generally recognized practices and cultural norms that exist in an unwritten form; there are two components of the test (the act and the belief) that determine customary international law; and a state cannot renege on its obligation to uphold customary international law.

The derivation of customary law is subjective and could potentially take a long time to mature. The key to this process hinges on the distinctions between "custom" and "usage." A custom refers to an identifiable habit or practice that is conducted "under the conviction that they are obligatory under international law," while usage refers to certain acts without the conviction regarding legal obligation.[16] For example, acknowledging the inviolability of a white truce flag began as a practical usage for conducting battlefield negotiations and only over time became recognized as a custom. Once recognized by the community of states as a practice with associated legal obligations, it evolved

into customary international law and hence is now recognized as an element of the Law of War.[17] In U.S. Army Field Manual (FM) 27-10, *The Law of Land* Warfare, written in 1956 and revised in 1976, the United States codifies its position that customary Law of War is binding on all nations and indicates all U.S. forces would strictly observe it.[18]

The second source of the Law of War, conventional international law, consists of a voluminous collection of laws, conventions, declarations, and protocols spanning generations. It is easier than customary international law to comprehend, but perhaps more difficult to derive. For example, conventional international law codes address specific proscriptions on conduct during armed conflict, yet an international convention of jurists and political leaders must agree on these laws before they can exercise the full force of international law. To further complicate matters, this body of materials generally evolved only in response to a global event that revealed, after the fact, pre-existing inadequacies in Law of War codes.

The Law of War imposes constraints on armed conflict in two particular areas: behavior of combatants in action and behavior toward and treatment of persons and objects in war, especially victims in war.[19] The most widely recognized collection of these laws is contained in two groups of treaties — the Hague and Geneva Conventions. The Hague Conventions consist of two primary conventions focused on hostilities in general and combatant conduct, while the Geneva Conventions, contained in a collection of four distinct conventions and two protocols, address protective provisions relating to civilians and prisoners of war.[20] The Hague Conventions, in particular, acknowledge the inability of conventional international law to address or even anticipate all possible regulatory requirements, and consequently mandated that in the absence of applicable treaty law, civilians and combatants remain under the protection and proscriptions of customary international law.[21] Any discussion of this topic routinely identifies three foundation documents: The *Hague Convention of 1907*, with its focus on regulating the methods and means of warfare, the four *Geneva Conventions of 1949* and their establishment of inviolable protections for specific categories of war victims, and the *1977 Protocols to the Geneva Conventions of 1949*, which augment the 1949 convention.[22]

What is the Purpose of the Law of War?

In the words of one source, the Law of War "aims at limiting and alleviating as much as possible the calamities of war. [It] conciliates military needs and requirements of humanity … thus [making] the distinction between what is permitted and what is not permitted."[23] Another source asserts the Law of War integrates humanity into war and that application of the Law of War can serve as a tactical multiplier.[24] FM 27-10 indicates the Law of War, inspired by the "desire to diminish the evils of war," exists to protect combatants and noncombatants, safeguard human rights, and facilitate the eventual return to peace.[25] In summary, the purpose of the Law of War is to safeguard the rights of all parties to a conflict, empower international judicial bodies, regulate combatant conduct to mitigate suffering, and facilitate the eventual return to peace.

What are the Unifying Themes of the Law of War?

There are two distinct unifying themes associated with the Law of War. The first theme is identified by the phrase "jus ad bellum," a legal and philosophical term that describes those aspects of the Law of War intended to prevent armed conflict and, failing prevention, to justify war — in other words, to clarify *when* to wage war. The second theme, identified by the phrase "jus in

bello," describes those aspects of the Law of War intended to regulate or control combatant conduct — it qualifies *how* to wage war. The two themes complement each other by offering what University of Tennessee-Martin historian Alex Mosely describes as "a set of moral guidelines for waging war that are neither unrestricted nor too restrictive."[26]

Jus ad bellum, the older of the two themes, defines the circumstances under which the use of military power is legally and morally justified.[27] Early societies focused their angst over armed conflict on developing rules for the legitimate use of force and devoted little if any intellectual effort to suitably regulating the actual application of that force. Recognized international law expert and former legal advisor to the International Committee of the Red Cross, Dr. Robert Kolb, states that "man has for a long time and for a variety of reasons sought a legal framework by which he could reconcile 'might' with 'right.'"[28] Kolb places man's conduct of war in the context of a response to unprovoked aggression that restores a right that had been violated. He further explains that man has historically justified armed conflict with four material causes (defense, repossession of property, recovery of debts, and punishment), and understanding them helps illuminate why any society would go to the expense and sacrifice of war.[29] In another example, Michael Walzer defines a just war as a "limited war" whose conduct is governed by a set of rules "designed to bar, so far as possible, the use of violence and coercion against noncombatant populations."[30] In other words, because armed conflict was considered valid if it met specific criteria, no need existed to regulate conduct in a just war — the ends were sanctioned or blessed by the highest authority and, hence, the means were already justified. This approach eventually led to the development of the

second unifying theme, jus in bello, but not until Western civilization had showcased man at his very worst.[31]

In the first century B.C., Cicero wrote, that war should never be undertaken by a state "except in defense of its honor or safety." He further stipulated several conditions that had to be met to justify war: war had to be declared by a proper authority; the antagonist had to be notified of the declaration of war; and the antagonist had to be provided an opportunity to negotiate a peaceful settlement before the onset of hostilities.[32] This effort to codify justification criteria probably represented the first formal attempt, at least in the Western World, at developing a universally accepted approach to initiating war — if you will, the first glimmers of jus ad bellum.

As the Roman Empire expanded, the grounds for justifying war became more complex and open to interpretation, causing the emerging Christian Church to evaluate its pacifist stance in light

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of the practical demands for survival against invading barbarians. Early Christian scholars, such as Saint Augustine and Saint Thomas Aquinas, worked to reconcile church doctrine with political pragmatism by replacing the Roman legal criteria for justifying war with a moral or religious perspective, wherein the forces of good waged war against the forces of evil, ultimately invoking God's blessing for, in the case of the Empire, just wars of survival.[33]

For 12 centuries following the fall of the Western Roman Empire, the influence of Church theologians permeated Western society, to include political theory. Saint Augustine, writing in the 5th century, melded the Roman political perspective on just war with emerging Christian theology and the practical reality of survival in the face of internal and external secular threats, subsequently developing a political theory of

just war with a uniquely religious twist. He acknowledged Cicero's three principles of a just war, but for Augustine, war served one fundamental purpose: it was the means by which God either punished man or absolved him of his sins. Based on this premise, Augustine postulated that any war ordained by God was, by default, just. "Beginning with Augustine," says just-war theorist Paul Christopher, "war … became more than just a legal remedy for injustice; it became a moral imperative."[34]

Saint Thomas Aquinas further defined and codified jus ad bellum principles. His theories established a theoretical foundation grounded in Christian morality, resulting in what Frederick Russell describes as "perhaps the best compromise between aggression and Christian pacifism that the Church could devise."[35] According to Aquinas, war existed for two basic reasons: to punish sin and right a wrong that detracted from the common good."[36] Of special note was his postulate that any war that satisfied the basic criteria (declared by proper authority and fought for just cause) could be deemed unjust if not prosecuted with the right intentions.[37] His codification of these jus ad bellum principles stood for 300 years and served as a start point for the next noteworthy Law of War theorist, Hugo Grotius. To appreciate his impact, it is necessary to understand his environment — a Europe devastated by the Thirty Years War.

This conflict raged across the European landscape between 1618 and 1648. Ignited by the flames of religious intolerance, it also owed its existence to hegemonic aspirations of the great houses of Europe and the tenuous political network that reflected the state of the Holy Roman Empire. This war redrew the political landscape of Europe and placed into sharp relief the fundamental differences between Protestants and Catholics, but much more significant is this conflict's catastrophic impact on the population, economies, and social fabric of Europe that gave rise to thinkers and advocates inclined to further the concepts of conflict regulation.

As many as 10 million people may have died during this period due to the sword, famine, disease, and murder. Germany began the conflict with a population of around 16 million; at war's end, its death toll stood at four million. Bohemia lost two million — 60 percent — of its prewar population. The city of Magdeburg, called by some historians the "Hiroshima of the Thirty Years War," was decimated when over 80 percent of its population was eliminated by invading troops.[38] "For weeks," says one historical analysis, "mutilated, charred corpses floated down the Elbe to the North Sea."[39] This conflict forced Europeans to learn many lessons, among them, says historian Larry Addington, the realization that "lack of restraint could be destructive to the interests of all sides," a lesson that subsequently helped "to inspire some of the first modern efforts at establishing 'international law' governing the conduct of military forces and their treatment of civilians."[40]

Hugo Grotius led the vanguard of those efforts. He was a 17th-century jurist and humanist, perhaps best known for capturing his perspective on international law in the three volume *De Jure Belli ac Pacis Libri Tres* (*The Law of War and Peace*). He used these words to describe the Europe of his day: "Throughout the Christian world, I observed a lack of restraint in relations to war, such as even barbarous races should be ashamed of; I observed that men rush to arms for slight causes, or no cause at all, and that when arms have once been taken up, there is no longer any respect for law, divine or human; it is as if, in accordance with a general decree, frenzy had openly been let loose for the committing of all crimes.[41]

Grotius noted the reluctance of the Church to intervene in what he perceived to be overt violations of basic natural law and so he devoted considerable energy to devising a replacement for the ineffective ecclesiastical-based system of international law in force during the Thirty Years War. Paul Christopher describes Grotius' focus in this manner: "Grotius' objective was to supplant the impotent and corrupt ecclesiastical authority with an external, objective, secular authority that the competing political interests would accept — a corpus of international laws."[42] In his own words, Grotius became "fully convinced … that there is a common law among nations, which is valid alike for war and in war."[43] Throughout his writing, one central theme appears: international relations should be governed according to the same natural principles, laws, and morals that govern individual relationships.[44]

Grotius added the following five elements to Aquinas' list of three just-war principles. It is clear his primary objective was to prevent war if at all possible and, failing that, to mitigate its impact:

• War must contain an aspect of 'proportionality,' meaning the ultimate aim of the war is proportional to the impact (damage) the war will have on society.

• War must be fought with a reasonable chance of success.

• War must be publicly declared.

• War must be conducted only as a measure of last resort.

• War must be fought 'justly.' [Note: this particular element, while not specifically cited by Grotius, is referenced by him on Chapter 25, page 18 of the prologue to *The Law of War and Peace*. With this, Grotius sets the stage for the evolution of the second (jus in bello) unifying theme of the Law of War].[45]

Grotius' theory that natural law bound all people and communities meant that, by its very nature, natural law was superior to even canon law.[46] Consequently, secular rulers throughout Europe quickly acknowledged his justification principles as the guidelines best suited to international diplomacy (and their individual interests). By replacing church influence with a code based on natural law, Grotius hoped to eliminate the specter of a war fought solely for religious reasons. Wars could still be

waged, but the checklist justifying them was now more objective and open to international scrutiny. This list of eight customary jus ad bellum principles, together with the four legitimate causes for waging a just war (defense, repossession of property, recovery of debts, and punishment), guided the international community for over 375 years.

The U.S. Army JAG School defines jus in bello, the second Law of War unifying theme, as the collection of legal and moral restraints that apply to the conduct of waging war. This body of law, sometimes referred to as Regulation of Hostilities Law, or Hague/Geneva Law, traces its roots back at least 24 centuries. Its lineage traversed several of history's great civilizations, to include the Babylonians, Chinese, and Greeks, but once again, it was Hugo Grotius who, in addition to his significant contributions to the evolution of jus ad bellum theory, proposed a rudimentary collection of regulatory criteria intended to guide combatant conduct.[47]

Grotius proffered three questions intended to serve as regulatory jus in bello guidelines: who could be lawfully attacked, what means could be employed to do so, and how best to treat prisoners?[48] These guiding principles continued to evolve over the subsequent four centuries. For example, Dr. Francis Lieber in 1863 referred to "justice," "faith," and "honor" in writing *General Orders No. 100, Instructions for the Government of Armies of the United States in the Field*; one U.S. Army Law of War publication in force during World War I referenced the need to apply the principles of "necessity," "humility," and "chivalry" during combat; and present-day Law of War doctrine recognizes the three principles of "discrimination," proportionality," and "responsibility" as the foundation on which combatants must base their actions.[49]

This is an appropriate juncture to introduce the dilemma represented by the tension between the notion of military necessity and the regulation of combatant conduct. One of the definitions of the word "necessity," found in *Webster's Dictionary* reads "pressure of circumstance," while another makes reference to "physical or moral compulsion." The concept of military necessity is unique, however, in that it pertains to a specific environment — armed conflict. The concept embodies a principle that justifies measures deemed indispensable to secure military success, yet not explicitly forbidden by the Law of War.[50]

Dr. Lieber addressed the dilemma in 1863, and subsequent iterations of U.S. Law of War regulations continued the theme in the effort to balance what often appeared to be diametrically opposed concepts.[51] Paul Christopher defines the term as one that "specifically addresses the tension inherent in attempting to minimize suffering through rules while at the same time employing a method (violence) that necessarily causes suffering."[52] And Douglas Lackey, Professor of Philosophy at City University of New York, acknowledges the destruction of life and property as "inherently bad, therefore military forces should cause no more destruction than strictly necessary to achieve their objectives."[53] The dilemma is made all the more problematic by subjective, often collective, interpretation.

How is the Law of War Triggered?

The Law of War has a direct, but temporary, impact on a nation's sovereignty. *Webster's Dictionary* defines a sovereign as "one that exercises supreme authority within a limited sphere" acting with "freedom from external control." The legal community views domestic law as a "barrier of sovereignty" that functions to protect a state from external interference with its internal affairs; in certain situations, however, international law can

displace domestic law. International maritime law is an example of such a displacement, and the Law of War is likewise capable of piercing the barrier of sovereignty and displacing domestic law under the right circumstances. Once triggered, the Law of War displaces a state's domestic law for the duration of a conflict to an extent contingent on the nature of said conflict — in other words, the predominant status of a nation's domestic law is restored once the conflict is resolved and the need for the application of the Law of War is terminated.[54]

The Law of War is triggered by a conflict, either international or internal in nature, regardless of whether the conflict is recognized by all parties. The following excerpt from Article 2 (common to all four 1949 Geneva Conventions) clearly outlines this standard, and answers the *quid pro quo*, or reciprocity, issue alluded to by Secretary Schlesinger as well:" The present Convention shall apply to all cases of declared war or of any other armed conflict which may arise between two or more of the High Contracting Parties, even if the state of war is not recognized by one of them. Although one of the Powers in conflict may not be a party to the present Convention, the Powers who are parties thereto shall remain bound by it in their mutual relations."[55]

The GWOT represents a case where the triggering standard has been met, and therein lies the real issue at the heart of the ongoing debate. How do you enforce jus in bello standards when one of the combatants refuses to acknowledge customary and conventional international law? Does one abandon all attempts to regulate combatant conduct in pursuit of a tactical advantage, or does one enforce standards of combatant conduct unilaterally, embrace a higher moral purpose, and risk yielding a tactical advantage? Is there, as some would advocate, a middle ground that better reflects the complexity of the COE?

The Law of War Rules Have Not Changed

"No country which relies on the law of the land to regulate the lives of its citizens can afford to see that law flouted by its own government, even in an insurgency situation. In other words, everything done by a government and its agents in combating insurgency must be legal."[56]

The time is right for the international community to review the Law of War in light of the GWOT. Without doubt, this review will arrive at two findings: Law of War violations are neither necessary nor excusable for successful prosecution of military operations in any environment; and the Law of War in its current form is adequate to the task. Without question, the disciplined application of the Law of War at the expense of military necessity has proven challenging, but it is a challenge that our military, our political leaders, and all members of the international community must address head on. It exists to rigorously frame justification for war in the hopes of preventing it, and failing that, to regulate combatant conduct by interjecting humanity into a violent activity; to be effective, it must be professionally taught, enthusiastically trained, and rigorously enforced. Most importantly, the Law of War should not be creatively interpreted by any party to a conflict. The decision to comply or violate is black or white, right or wrong, legal or illegal; there can be no room for equivocation.

Personal opinion aside, the simple truth is this: until Congress ratifies an internationally sanctioned revision to the Law of War, the rules have not yet changed, and *Geneva 1949* remains the legal baseline standard of conduct for all U.S. Armed Forces, regardless of the operational environment. As General Schoomaker stated, "We're going to have to [change] some of the things

that made us the best Army in the world. Our values are sacro-sanct … everything else is on the table."[57]

Remaining true to both the letter of conventional international law and the spirit of customary international law is without question the road less traveled, but as events in Afghanistan, Guantanamo Bay, and Iraq have shown, the alternative carries with it significant political implications as well as the potential for near-irrevocable damage to our country's international reputation and strategic goals.

Notes

[1]R.L. Brownlee and Peter J. Schoomaker, "Serving a Nation at War: A Campaign Quality Army with Joint and Expeditionary Capabilities," Army Strategic Communications, Washington, DC, 2004, "Foreword."

[2]Brownlee and Schoomaker, p. 3: "[The COE] is not the strategic context for which we designed today's United States Army. Hence, our Army today confronts the supreme test of all armies: to adapt rapidly to circumstances that it could not foresee."

[3]Care should be taken, however, because those values have a long heritage. In 1630, John Winthrop, first Governor of Massachusetts, described his vision for Boston, see *A Model of Christian Charity*, 1630, accessed online at *http://www.mtholyoke.edu/acad/intrel/winthrop.htm,* 9/22/2004. Former President Ronald Reagan referenced Winthrop in his farewell speech, see *President Ronald Reagan's Farewell Speech,* 11 January 1989, accessed online at *http://www.reaganfoundation. org/reagan/speeches/farewell.asp,* 9/22/2004.

[4]*Final Report of the Independent Panel to Review DoD Detention Operations*, August 2004, pp. 80, 81 and 91, accessed at *http://www.defenselink.mil/news/AUG2004/d20040824finalreport.pdf,* 10/5/2004.

[5]Gerald Irving A. Draper, *The Red Cross Conventions*, Praeger Publishers, New York, 1958, p. 48. Among other qualifications, Draper was a lecturer in the Faculty of Laws at King's College in London.

[6]Peter Paret, *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, Princeton University Press, Princeton, 1986, p. 72.

[7]Ibid.

[8]Ibid.

[9]*Law of War Workshop Deskbook*, International and Operational Law Department, Judge Advocate General's School, U.S. Army, Charlottesville, VA, accessed online at *http://www.au.af.mil/au/awc/awcgate/law/low-workbook.pdf,* 3/22/2005, p. 1-2, hereafter referred to as "JAG School Deskbook," June 2000.

[10]Frederic De Mulinen, *Handbook on the Law of War for Armed Forces*, International Committee of the Red Cross, Geneva, 1987, p. 1, "Law of War Summary for Commanders."

[11]Michael Walzer, *Just and Unjust Wars: A Moral Argument With Historical Illustrations*, Harper Collins, New York, 1977, p. 44.

[12]Department of Defense Directive 5100.77, *DoD Law of War Program*, Washington, DC, 9 December 1998, p. 2, paragraph 3.1, accessed online at *http://www.dtic.mil/whs/directives/corres/pdf/d510077_120998/d510077p.pdf,* 3/22/2005.

[13]*JAG School Deskbook*, p. 26.

[14]Theodor Meron, "Customary Law," *Crimes of War Project*, accessed online at *http://www.crimesofwar.org/thebook/customary-law.html,* 10/20/2004.

[15]Major Timothy P. Bulman, "A Dangerous Guessing Game Disguised As Enlightened Policy: United States Law of War Obligations during Military Operations Other Than War," *Military Law Review*, March 1999, pp. 155-156, 164-165.

[16]Ibid., p. 156.

[17]One can trace the use of a white flag of truce at least as far back as the *Laws and Customs of War on Land (Hague II)* 29 July 1899, Chapter III — On Flags of Truce, accessed online at *http://www.yale.edu/lawweb/avalon/lawofwar/hague02.htm,* 12/6/2004.

[18]U.S. Army Field Manual (FM) 27-10, *The Law of Land Warfare*, U.S. Government Printing Office, Washington, DC, 1976, Chapter 1, Section 1, paragraph 7c, accessed online at *http://www.afsc.army.mil/gc/files/FM27-10.pdf,* 3/22/2005.

[19]De Mulinen, p. 2.

[20]Ibid., p. 3.

[21]Ibid., this language, often referred to as the "Marten's Clause" after the advisor to the Russian Foreign Ministry, provided for a minimum standard of humanitarian treatment for combatants in the absence of specific conventional law.

[22]*JAG School Deskbook*, pp. 26-28.

[23]De Mulinen, p. 2.

[24]*JAG School Deskbook*, p. 3. In other words, because Law of War violations could motivate combatants to fight on despite difficult odds, Law of War compliance eliminates those motivations.

[25]FM 27-10, Section 1, paragraph 2.

[26]Alex Mosley, "Just War Theory," University of Tennessee-Martin, accessed online at *http://www.utm.edu/research/iep/j/justwar.htm,* 9/23/2004.

[27]*JAG School Deskbook*, p. 3.

[28]Robert Kolb, "Origin of the Twin Terms *Jus Ad Bellum* and *Jus In Bello*." *International Review of the Red Cross*, 10/31/1997, p. 1, accessed online at *http://www.icrc.org/Web/Eng/siteeng0.nsf/iwpList163/D9DAD4EE8533DAEFC1256B66005AFFEF,* 9/23/2004.

[29]Ibid.

[30]Walzer, xvii.

[31]Kolb, p. 2, "The subjective notion of the right to wage war in pursuit of certain causes precluded the emergence of an independent 'jus in bello.'"

[32]Paul Christopher, *The Ethics of War and Peace: An Introduction to Legal and Moral Issues* (Prentice Hall, Englewood Cliffs, NJ, 1994, p. 13. Christopher cites Cicero's work *De Re Republica 3, XXIII.*

[33]Ibid., pp. 23-24.

[34]Ibid., p. 47.

[35]Frederick Russell, *The Just War in the Middle Ages*, Cambridge University Press, London, 1975, p. 303.

[36]Ibid., p. 291.

[37]Christopher, pp. 54-56. Christopher references the *Summa Theologica* for his list of Aquinas' three jus ad bellum principles, and also references Aquinas' *Questiones in Heptateucheum 10* for the material that defines just cause.

[38]Larry H. Addington, *The Patterns of War Through the Eighteenth Century*, Indiana University Press, Bloomington, IN, 1990, p. 87. See also Albert Sidney Britt, III, et. al., *The Dawn of Modern Warfare*, The West Point Military History Series, Thomas E. Griess, ed., Avery Publishing Group Inc., Wayne, IN, 1984, pp. 48-54.

[39]Britt, p. 52.

[40]Addington, p. 87.

[41]Hugo Grotius, *De Jure Belli ac Pacis, Libre Tres*, translated by Francis W. Kelsey, Wildy & Sons Ltd, London, 1964, Prologomena, Section 28, hereafter referred to as Grotius.

[42]Christopher, p. 71.

[43]Grotius, Introduction, xii.

[44]Christopher, p. 72.

[45]Ibid., p. 89; see also Mosely, pp. 3-5.

[46]Ibid., p. 109.

[47]7th-century Babylonians distinguished between enemy civilians responsible for starting a war and the soldiers who actually fought, and treated captured soldiers and civilians according to well-established rules [*JAG School Deskbook*, p. 5; Christopher, p. 9]. Ancient Egyptian battle records provide evidence of humanitarian conduct, and the 5th-century B.C. Chinese philosopher Sun Tzu advised that "captive soldiers be kindly treated and kept" [*JAG School Deskbook*, p. 5; Christopher, p. 9; Sun Tzu, "On The Art of War," in *Roots of Strategy*, ed. Brigadier General R. Phillips, Stackpole Books, Harrisburg, PA, 1985), p. 25.] The 4th-century B.C. Hindu *Book of Manu* provides a very detailed list of regulatory guidelines regarding the treatment of various categories of both combatants and noncombatants [*JAG School Deskbook*, p. 5; Christopher, p. 9.] Greek philosophers, Socrates in particular, admonished against indiscriminate destruction of property [Christopher, p. 10], and Michael Walzer observed that the code of chivalry was "widely shared in the later Middle Ages and sometimes honored" (Walzer, p. 34), representing a customary, if informal, evolution of jus in bello principles. The Geneva 1949 lineage includes Geneva 1929, Hague 1907, Hague 1868, the Lieber Code, and the St. Petersburg Declaration of 1868.

[48]Christopher, p. 100.

[49]Mosley, p. 5.

[50]De Mulinen, pp. 82-83; and Donald A. Wells, *The Laws of Land Warfare: A Guide to U.S. Army Manuals*, Greenwood Press, Westport, CT, 1992, p. 25.

[51]Dr. Francis Lieber, *Instructions for the Government of Armies of the United States in the Field*, Adjutant General's Office, Washington, DC, 1863, Article 14, hereafter referred to as "Lieber Code," accessed online at *http://www.au.af.mil/au/awc/awcgate/law/liebercode.htm,* 9/23/2004. Various other Law of War sources, such as the Hague Convention of 1907, *US Rules of Land Warfare* [1914, 1934, and 1940 versions], *US Law of Land Warfare* [1956], and Article 147 of the *Convention (IV) Relative to the Protection of Civilian Persons in Time of War* also provide definitions of, and insight into, this dilemma. In Paul Christopher's opinion, "If the Just War Tradition is going to function as a viable set of legally enforceable rules, the principle of military necessity must be more precisely defined and its relationship to other principles clearly articulated in law," Christopher, pp. 167-168.

[52]Christopher, p. 166.

[53]Douglas P. Lackey, *The Ethics of War and Peace*, Prentice-Hall, Englewood Cliffs, NJ, 1989, p. 59.

[54]*JAG School Deskbook*, p. 28.

[55]Common Article 2 to *Geneva I, II, III, and IV*, 1949. See also *JAG School Deskbook*, pp. 28-29, for a discussion of the "Barrier of Sovereignty" and "The Triggering Mechanism."

[56]Frank Kitson, *Bunch of Five*, Faber and Faber Ltd, London, 1977, p. 289. Lieutenant General Kitson is one of Great Britain's foremost authorities on counterinsurgency operations.

[57]Brownlee and Schoomaker, p. 24.

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In Support of the Military Decisionmaking Process:

A Relevant Tactical Planning Tool for Today and Tomorrow

by Major Bret P. Van Poppel

"[It is] essential that all leaders — from subaltern to commanding general — familiarize themselves with the art of clear, logical thinking. It is more valuable to be able to analyze one battle situation correctly, recognize its decisive elements and devise a simple, workable solution for it, than to memorize all the erudition ever written of war."[1]

As the modern and future battlefields grow more complex and technologically based, it will be essential for commanders and staffs to plan, decide, and communicate effectively. Command and control will continue to be a key component in planning, synchronizing, and projecting combat power. Joint Vision 2020 explains that, "In the joint force of the future, command and control will remain the primary integrating and coordination function for operational capabilities."[2] In this vein, the effective and efficient use of any planning or decisionmaking model will be critical to successful battle command on tomorrow's battlefield.

To guide planning, the U.S. Army employs an analytical problemsolving mod-

el: the military decisionmaking process (MDMP). The MDMP is U.S. Army doctrine and is addressed in detail in FM 5-0, *Staff Organization and Operations*, which describes the deliberate form of MDMP as a prescriptive process and analytical tool. It consists of nine principal steps (including rehearsal, and execution and assessment), and encompasses commander and staff planning and decisionmaking activities from receipt of mission through execution (see Figure 1).[3] Commanders may also use an abbreviated form of the MDMP to accommodate time-limited planning situations.[4]

Many opponents criticize the MDMP as overly rigid, not adaptable for the future force, and contradictory to experienced decisionmaking. Nevertheless, the MDMP is an effective planning guide for large-unit staffs and a practical problemsolving tool that is relevant on the modern battlefield. It can be used as prescribed in U.S. Army doctrine, or it can be modified by employing field-tested enhancements that accentuate the staffs' strengths, mitigate risks, and accommodate operational con-

ditions. This article summarizes some of the advantages of the MDMP and highlights some common improvements that commanders and staffs employ to tailor the process.

Advantages of the MDMP

As a planning guide, the MDMP is a straightforward, analytical model that clearly — indeed, in the deliberate form, prescriptively — guides planning. FM 5-0 cites many advantages of the MDMP such as analysis of multiple courses of action (COAs), and coordination, integration, and synchronization of an operations plan.[5] There are several other advantages of the MDMP:

• The process blends rigorous structure and opportunities for critical analysis to accentuate staff officers' experience.

• The model and process are well-integrated with U.S. Army doctrine.

• The wargame's detailed analysis aids in synchronizing battlefield operating systems.

The flexibility of the MDMP accentuates the experience and skills of individual staff officers. FM 5-0 specifies a multitude of subordinate tasks and staff outputs for the deliberate form of MDMP.[6] For the inexperienced staff officer, this degree of rigor can be appropriate and helpful. Even for an experienced staff officer, the well-defined format of the deliberate MDMP provides solid guidance for continual staff estimates and efficient opportunities for critical analysis. For example, the mission analysis step dictates many staff products, yet it also requires critical staff analysis to accurately define and frame the tactical problem.

Another advantage of the MDMP is its strong integration with U.S. Army doctrinal manuals. The proceduralized methodology of the MDMP provides a degree of process uniformity throughout the Army. While individual staffs usually tailor the MDMP to accentuate their strengths, the basic process is common throughout all levels of command. For the new staff officer or commander, the deliberate MDMP is a recognizable format. Additionally, FM 5-0-1, *Operational Terms, Symbols and Graphics*, provides the MDMP with consistent doctrinal symbology and terminology. This common language mitigates some of the confusion that would exist without such strong doctrine-process linkage.

Wargaming subjects the staff's COAs to a rigorous analysis. The wargame is both an analysis tool and a preliminary rehearsal of the plan and its synchronization. FM 5-0 explains that the wargame helps the commander and staff maximize and deliver synchronized combat power against the enemy, clarify battlefield vision, and focus intelligence preparation of the battlefield (IPB) appropriately.[8] The wargame can also illustrate resource shortfalls and necessary coordinating instructions between units. COAs that are not feasible may be eliminated or substantially revised as a result of the wargame. When the staff harvests time by employing an abbreviated process, a single COA can be wargamed against multiple enemy COAs to optimize flexibility, synchronization, and effectiveness.

Beyond the Manual: Enhancing MDMP

There are many techniques that can be used to improve the MDMP and its application. Some techniques that are strongly recommended by authors, as well as Army training centers, include:

• Tailoring the MDMP to accommodate operational conditions.

• Early and active participation by the commander.[9]

• Blending conceptual and analytical COAs.

• Focused COA development (also known as "directed COA development"), especially in the abbreviated form of MDMP.[10]

One of the most important factors in high-quality planning is the application of the planning model. The commander and chief of staff proactively seek to align the planning process with the staff's strengths and operational conditions. During time-limited situations, the MDMP can be abbreviated to meet mission and planning timelines without significantly sacrificing the plan's quality. A recent example of tailoring the MDMP comes from the 101st Airborne Division's after action review (AAR) of combat operations during Operation Iraqi Freedom (OIF): "Through an abbreviated MDMP, subordinate units were provided a task and purpose, task organization, commander's intent, and simple graphics. Particularly, when subordinate units were able to conduct parallel planning, this streamlined process allowed the division to maintain an operational tempo that outpaced the enemy's ability to adjust and react."[11]

The commander's input is critical in leading the planning process. Indeed, he is the decisionmaker and must provide insightful, persuasive, and timely guidance to direct the staff. FM 3-0, *Operations*, links the commander's role in the plan-
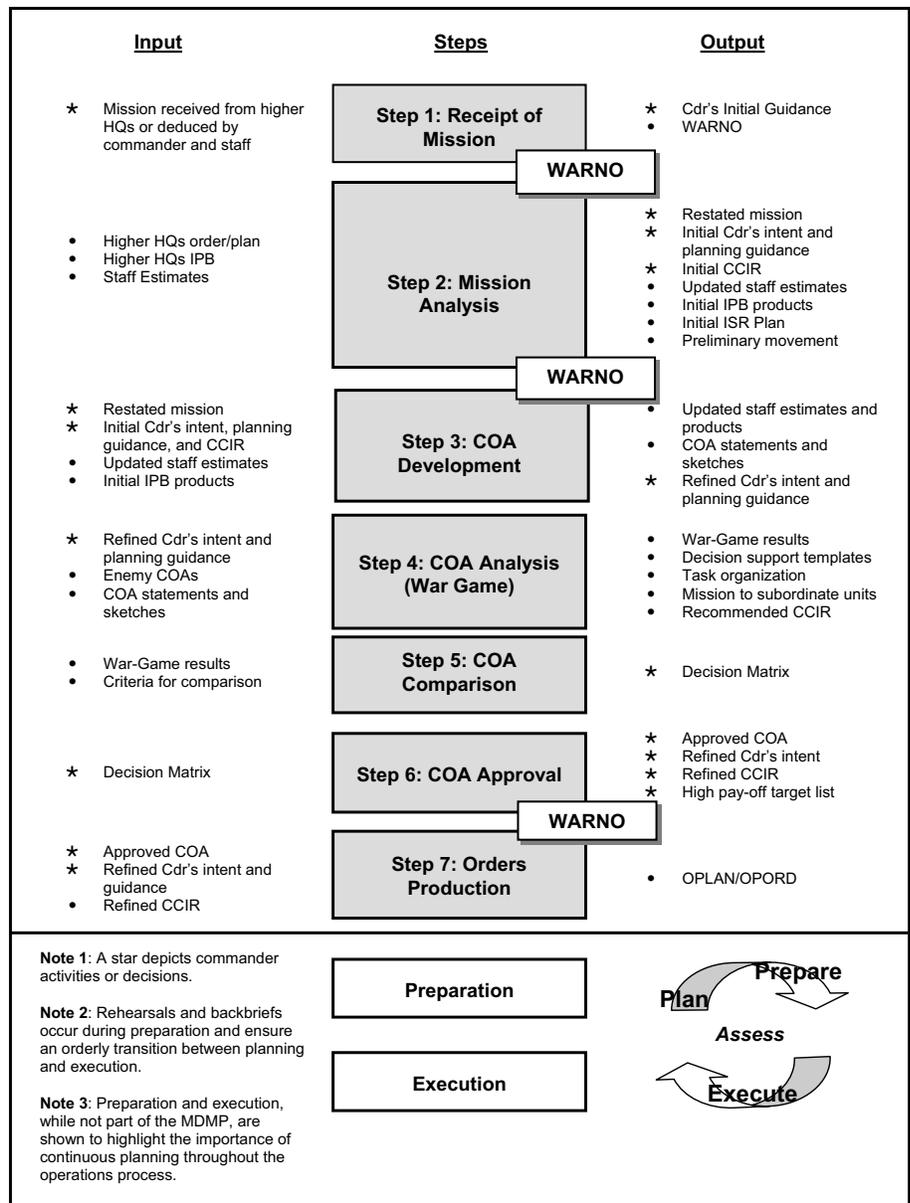

Figure 1: Military Decisionmaking Process[7]

ning and decisionmaking processes with battle command — the art of command against a hostile and thinking enemy.[12] Effective battle command requires that commanders visualize their operational battlespace, describe their operational intent, and direct operations of subordinate elements.[13] Commanders can provide this guidance by visualizing battlespace and clearly describing this vision through commander's intent and planning guidance.

The commander can improve the planning and decisionmaking processes by developing a separate COA. In doing so, the commander can take advantage of the opportunity to develop a conceptual COA using a "top-down" approach that leverages his experience and intuition.[14] Comparatively, staff-produced COAs are generally "bottom-up" plans that are crafted after decomposing and analyzing the mission. Comparing the staff's "analytical" COA and the commander's "conceptual" COA can illuminate potential flaws in one or both plans — a stark contrast may be an indicator of poor planning, poor guidance, or both. Additionally, blending analytical and conceptual plans may provide an optimal COA.

"The wargame is both an analysis tool and a preliminary rehearsal of the plan and its synchronization. FM 5-0 explains that the wargame helps the commander and staff maximize and deliver synchronized combat power against the enemy, clarify battlefield vision, and focus intelligence preparation of the battlefield (IPB) appropriately. The wargame can also illustrate resource shortfalls and necessary coordinating instructions between units."

Focused COA development is a field-tested technique that can improve the MDMP. Instead of developing multiple COAs, the staff develops one detailed COA. The commander may provide a second COA for comparison or a conceptual COA for the staff to refine concomitantly with a staff-generated COA. The focused COA technique is often recommended for battalion task forces and brigade combat teams at the Joint Readiness Training Center. More significantly, units conducting combat operations in Operation Iraqi Freedom (OIF) employed this technique very effectively. For example, to deny enemy interdiction of the 3d Infantry Division's drive to Baghdad, the 101st Airborne Division successfully employed a focused COA technique to quickly plan and execute the clearing of three critical towns in the Karbala Gap: "The division was forced into a very compressed MDMP sequence, given only a mission order and a hasty revised task organization to augment the assault battalions with a battalion task force of armor. The division was able to move quickly into these towns due, in large part, to a focused course of action, a future operations (FRAGO) cell, situational awareness through Eagle JCP and Blue Force Tracker, and a rapid dissemination of the orders through TACSAT and Eagle."[15]

Focused COA development eliminates the tendency for staffs to artificially generate "throw-away" COAs for the purpose of meeting the rigid comparison requirements of the MDMP. A single COA does not suggest that the staff fails to consider relevant planning factors. Rather, the single COA can be used as a point of departure for detailed planning to initially focus the staff. A single COA may also save time that could be reallocated to enhance other steps of the MDMP such as the wargame.

The MDMP is an effective tactical planning tool that is relevant on the modern battlefield. The process is a proven model that coordinates and synchronizes operations. Its prescriptive nature provides adequate structure for an inexperienced staff officer as well as opportunities for critical analysis for the seasoned staff officer or commander. The MDMP's strong doctrinal base ensures process and language commonality throughout the Army. COA analysis and the wargame can also improve a plan's synchronization and integration. The 326th Engineer Battalion explains the effectiveness of the MDMP from its experience during OIF: "The MDMP is a tool that works both in combat and when planning future operations. It is a continuous process that cannot be

overdone and has proved to be essential in war."[16]

More so than the process itself, the appropriate application of the MDMP is critical to planning and decisionmaking. Units that successfully employ the MDMP modify the doctrinal process commensurate with the staff's collective skills and operational conditions. Just like any collective task, planning requires dedicated and high-quality training. With battle-focused staff training that incorporates relevant lessons from recent operations, the MDMP can be a key component in synchronizing and projecting combat power on tomorrow's battlefield.

Notes

[1]U.S. Army Field Manual (FM) 3-0, *Operations*, U.S. Government Printing Office (GPO) Washington, D.C., June, 2001, p. 5-1. Quoted from *Infantry in Battle*, 1939.

[2]Ibid., p. 31.

[3]FM 5-0, *Army Planning and Orders Production*, GPO, Washington, D.C., 2005, Chapter 3.

[4]Ibid.

[5]Ibid.

[6]FM 5-0, Chapter 3, Appendix C, D, and E.

[7]FM 5-0, p. 3-3.

[8]Ibid., Chapter 5.

[9]John F. Schmitt and Gary Klein, "How We Plan," reprinted for U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, from *Marine Corps Gazette*.

[10]Common recommendation for battalions and brigades at the Joint Readiness Training Center (JRTC) are based on the author's experiences at JRTC during 1993 and 1996.

[11]Headquarters, 101st Airborne Division, "Lessons Learned, Part I, Operation Iraqi Freedom," Executive Summary, Fort Campbell, Kentucky, page viii–ix.

[12]FM 3-0, Chapter 5.

[13]Ibid.

[14]Schmitt and Klein posit that "…conceptualizing a COA should be a top-down gestalt phenomenon rather than bottom-up developmental process."

[15]101st Airborne Division, "Lessons Learned, Part I, Operation Iraqi Freedom," pp. 7-18 – 7-19.

[16]Ibid., p. 8-19.

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The Unit Field Ordering Officer in Iraq

by Captain Michael L. Burgoyne

Units deploying to Iraq may find a short write-up in their deployment standard operating procedures (SOP) regarding the Class A agent and the field ordering officer (FOO). These personnel receive cash funds for critical supply purchases and can be a powerful asset in supply acquisition. With limited supply and transportation available, deployed units are often forced to work with the local economy to meet their needs. However, most logistics officers (S4s) and senior supply noncommissioned officers (NCOs) have little experience or working knowledge on the common tasks, purposes, and capabilities of a Class A agent and FOO. In an underdeveloped theater, the FOO can often be the only source of supply for certain items and faces numerous challenges including bureaucracy, availability, and combat operations. His ability to overcome these obstacles can greatly aid his unit in mission accomplishment.

Bureaucracy

There are several players involved in field ordering operations, including the FOO, the Class A agent, the finance office, resource management personnel, contracting personnel, and the unit commander. Successfully navigating through a maze of personnel with diverse backgrounds and motivations is a daunting task. Patience, flexibility, and creativity are required to reach the ultimate goal — supplying soldiers with essential items.

The FOO is a soldier or Department of the Army civilian authorized to purchase items valued less than $2,500 under the supervision of a contracting officer. This allows the unit representative to make small purchases for a deployed unit when a local merchant does not accept credit cards. Note: NIPRNET connections and DHL delivery allow units to use government purchase cards in Iraq; do not destroy government purchase cards, bring them. In essence, the FOO is an officer, usually the S4, appointed by the commander to buy critical items on the economy with cash.

The Class A agent is a sergeant first class (SFC) or higher, who maintains control of the funds authorized to the FOO. The Class A agent is responsible for making payments and keeping track of the funds.

The finance office performs a vital role in the process — they have the money. Finance will train and appoint the Class A agent and issue him funds. Most finance offices will assist FOO teams by providing extra hours or appointment times separate from normal operating hours.

Resource management (RM) is a subunit of a division or corps G4 staff. These soldiers, warrant officers, and civilians control and manage budgeting for their organizations. The FOO submits a DA Form 3953, "Purchase Request and Commitment Form," to the RM office, who completes the form with funding authorizations and documents expenditures after they have been spent. The RM should be treated with respect and reverence, as they determine how much cash the unit will receive.

Contracting officers, similar to purchasing officers, have two chains of command: a contracting finance chain and a tactical command chain. Contracting officers can be found at division, corps, and

in some cases, at the separate brigade-sized unit level. FOOs receive training and appointment orders from the contracting office. The contractor approves or disapproves the purchases made by the FOO. In addition, contracting officers can make larger purchases for items over $2,500, which requires the S4 to submit a DA Form 3953 to the contracting office.

The battalion commander is in charge of conducting operations in a combat environment. He, his staff, and his commanders will generate multiple requirements for supplies and services. It is the duty of the FOO to fill those requirements to the best of his ability to allow the commander to successfully complete his missions.

Becoming a functional field ordering team is a complicated and painful process. It is in the best interest of any deploying unit to accomplish as much of the paperwork and training as possible prior to reaching theater.

The FOO and Class A agent must initially be appointed in writing by the battalion commander. Once that is complete, the Class A agent can receive training from the servicing finance unit and receive appointment orders from the finance office. The FOO receives training from the contracting officer and receives a memo annotating he has completed the training. With training memos and appointment orders in hand, the field ordering team

meets with RM, who will need copies of appointment orders for the FOO and Class A agent, a signature card from the battalion commander, completion of training documentation from contracting and finance, and the DA Form 3953. Note: The field ordering team should come prepared, thus avoiding the perils of "the copy machine is not for customers" mentalities. Once RM has approved a funding limit, usually $10,000 for a battalion, the field ordering team returns to contracting to receive orders for the FOO and get document numbers for Standard Form (SF) 44s. The SF44 works like a receipt and is used to track purchases. After receiving that document, the whole file of certifications, forms, and memos is taken to finance and the FOO team receives the cash.

Once purchases are complete, the FOO clears his purchases with contracting and receives a memo clearing the SF44s. The Class A agent clears finance and the field ordering team clears RM. Throughout the clearing process, the team replicates the initial appointment process as they reach each location. Field ordering teams should keep extra copies of all documentation in case it must be resubmitted.

This process is confusing, frustrating, and even more complicated when moving over hundreds of miles on dangerous main supply routes. Adding to the confu-

sion is the constant changeover of personnel and procedures. Over the course of a deployment, a FOO can expect to see numerous 'correct' methods for filling out the SF44 and DA3953. Much of the frustration can be averted through the use of digital nonsecure voice terminal (DNVT) calls and e-mail. Having a scanner and SIPRNET/NIPRNET access to send documents can limit face-to-face time and often eliminates the need for high-risk convoy operations. Prior to deployment, field ordering teams should coordinate with their supporting agencies and determine exactly how the process will be organized.

Availability

Preparing for deployment and operations is the key to success; however, even the best units are unable to predict everything they will need to accomplish the mission. S4s in Iraq face the daunting task of building up base camps, or often multiple base camps, in austere conditions. In addition, armor and other non-infantry units conduct missions not commonly trained or resourced.

Some of the most challenging types of items to acquire are technology or computer hardware items. The desert heat, sand, and general wear and tear create a high demand for computer technology. Some common requisitions include: flash drives, T-5 cable, monitors, printers, print-

er cartridges, 220-110 power converters, "A" disk drives, universal serial bus (USB) hubs, USB cables, and network hubs. The unit signal officer should be prepared to completely build a garrison-style computer network. Note: Kuwait has an excellent ready supply of technology products and general supply stores located in a lower-risk environment than that of Iraq. FOOs should make every effort to fill technology product needs during reception, staging, onward movement, and integration (RSOI).

Quality-of-life items are also critical to soldiers deployed far from home. Comfort improves performance and makes life a little more tolerable. Soldiers want beds, adequate plumbing, air conditioning, ice, chairs and tables, washers and dryers, satellite TV, satellite phones, weight sets, cleaning supplies, and video games. It is these items that bring about the FOO's biggest problems. According to regulations, field ordering teams are not authorized to purchase Class I or morale, welfare, and recreational (MWR) items — FOO funds are for emergency purchases only. At this point, the FOO is faced with a soldier's needs and a battalion commander ordering him to break a regulation.

The FOO cannot make everyone happy, which must be acknowledged. The key to getting the most for soldiers and avoiding a no-pay-due is to work with the contracting office. By calling the contracting officer and relating the requirement, the FOO can either receive permission to purchase with his funds or submit a separate DA3953, which will be contracted by the contracting officer. The brigade or division contracting officer usually has authorization for purchases up to $200,000. Separate MWR funds are also available. It is important to remember that the money the FOO is using is for soldiers and their mission. If the battalion commander wants money for an item, there is a way to purchase it, and between the FOO and contracting officer, they will find it.

Conducting a stability and support operation/high-intensity operation is complex and requires a number of supplies not commonly found in a unit supply room or modified table of organization and equipment (MTOE). These items include: surefire lights, urban breach kits, metal detector wands, generator light sets, welding kits, helicopter landing pads, fencing, satellite phones, and detainee restraints. Although usually supplied through the U.S. Army's supply system, the FOO can find a number of these items available for local purchase or contract. To fill vast and diverse needs of the unit, the FOO must find reliable civilian sources for his purchases. Suppliers can be broken down into three categories; local leaders, Iraqi vendors, and contractors.

Local leaders are a ready source of supplies and may be the only available source. While they can deliver supplies, using local sheiks or community leaders as supply sources can create numerous problems. The FOO is not an operations officer and local community leaders often confuse roles and will ask FOOs to help them with operational problems. The FOO may find himself complicating relationships between the command and the civilians in the area of responsibility (AOR). The FOO's ready cash flow may tempt a railroad technician or mayor to spend all of his time finding brooms and mops instead of fixing infrastructure.

In cases where the local security situation is sketchy at best, local sheiks or community leaders may be the only people secure enough to conduct business with coalition forces without fear of death. Additionally, the FOO must coordinate with the S2 to ensure that he is not inadvertently funding personnel on the black and gray list. Local leaders can be effective, but the FOO must be wary of conflicts of interest and the mission impact his purchases will have. Iraqi street vendors, depending on location, offer a wide range of supplies. Shops and stands in Baghdad and other large cities offer a large selection of items; however, street vendors and shops pose a great security risk to the FOO team.

The best source of supply for the FOO is the contractor or general merchant. These free-market capitalists want a piece of the rebuilding pie and have no conflict of interest. They are interested in one thing — money. The simplicity of the arrangement makes these individuals invaluable to the FOO.

Iraqi contractors may be store owners or company owners. The best way to find them is to meet with local leaders, translators, police, or any Iraqis the unit trusts and ask them about local businessmen. Fellow S4s or FOOs in other units may also have contacts with good vendors who can handle more business. The FOO must be wary of local leaders and administrators with whom he speaks. The demand for the dollar is strong and they want to act as a middleman to make money on the deal. Once a potential Iraqi contractor is identified, work a limited test deal and assess the process. The end-state of this transaction is good for all involved — money flows into the Iraqi economy and goods flow into the hands of soldiers.

The other type of contractor is the transnational company. These companies are usually built by enterprising Arabs or other foreign nationals who have been cashing in on U.S. efforts in Afghanistan and

"In cases where the local security situation is sketchy at best, local sheiks or community leaders may be the only people secure enough to conduct business with coalition forces without fear of death. Additionally, the FOO must coordinate with the S2 to ensure that he is not inadvertently funding personnel on the black and gray list. Local leaders can be effective, but the FOO must be wary of conflicts of interest and the mission impact his purchases will have."

"Buying off the street can be hazardous business. The field operating team must develop and implement detailed SOPs to execute this mission. Basic fundamentals include: maintaining 360-degree security; maintaining local security within 15 meters of vehicle; completing the deal quickly; and exiting the site using a different route."

Iraq. Without question, this is the most professional and efficient source of supplies or services. These companies and individuals can find technology items and other hard-to-find products. These personnel can be contacted by Thuraya phone and e-mail and can rapidly fill demands.

A good field ordering team will develop several relationships and use them to suit all their needs. An effective method is to use local vendors and contractors for simple, easy-to-find items and labor. The more prominent Iraqi contractors and transnational companies are used for hard-to-find items and expensive projects. By spreading out funds and providing redundancy, the FOO can help the economy and ensure a ready source of supplies. Dealing with the local population can be extremely rewarding — the FOO will sample local food, learn about local customs, and gain insight into a fascinating people.

Combat Operations

Conducting FOO missions in a sensitive combat environment offers some real challenges to the FOO and his team. Prior to deployment and operations, the FOO must create a functional team and train them on convoy operations, buying off the street, buying at a vendor's location, and buying at an agreed-on location. One major complication for the FOO is the composition of forces during missions. Often the team will change or take on additional personnel and vehicles. The FOO must ensure all personnel are trained and ready to conduct operations with maximum security.

Convoy operations are a regular part of all operations in Iraq. The FOO can expect to participate in a large number of convoys on highways, in villages, through cities, in markets, and on unimproved roads. FOOs must read and internalize the field manuals and Center for Army Lessons Learned (CALL) references on Iraqi convoy operations. FOO teams should follow the fundamentals listed below when conducting convoy operations:

• Maintain 360-degree security at all times — identify lead and rear gun trucks, minimum of two.

• Stay alert.

• Limit movement to mission-critical only — limit movement of critical assets, such as water and fuel trucks, to smallest number required and limit all night movement to mission-critical.

• Speed is security — do not stop or slow convoy; the more time spent in one place, the more time the enemy has to organize an attack.

• Overwhelming violence of action — all enemy contact should be met with uncompromising, accurate, and relentless firepower.

Buying off the street can be hazardous business. The field operating team must develop and implement detailed SOPs to execute this mission. Basic fundamentals include: maintaining 360-degree security; maintaining local security within 15 meters of vehicle; completing the deal quickly; and exiting the site using a different route.

The basic steps of the operation are similar to a cordon and search operation. The unit moves to the block where the shop is located and creates a perimeter in which the field ordering team operates. The cordon does not isolate the shop, but offers security and can immediately offer 360-degree fires. Gunners and riflemen must identify sectors of fire and ensure all avenues of approach are covered. Elements conducting perimeter security must also provide local security around vehicles due to handheld explosive or grenade threats. When the FOO determines outside security has been met, he will begin shopping. Because the cordon is not an isolating action, and because the FOO will be concealed from perimeter forces inside a shop, he must also be protected. A personal security detachment, made up of one or two personnel, must accompany the FOO (this can be the Class A agent, but preferably a separate individual). When conducting an exchange, the FOO and Class A agent will be focused on the vendor and *must* be covered by another soldier. The threat to the team is the concealed knife, pistol, or the hidden mujhad in the back room. The Class A agent should not make it known that he has the money until the deal is complete. Separating the FOO and the money makes it more difficult for insurgents to identify the man holding the cash. The deal should be completed in less than 15 minutes and the team out of the area as quickly as possible. The longer the team is on site, the longer insurgent forces have to create an ambush. A simple intelligence preparation of the battlefield will tell any FOO that insurgents need funds and a $10,000-$20,000 payday makes the team a high payoff target.

Making a street-vendor purchase at a vendor's house poses similar security risks. Arab custom forbids a host from harming a guest; however, security measures remain the same. Several additional complications occur when working out of a vendor's house — the vendor is immediately identified by his neighbors as a supporter of coalition forces. A time must be set for the meeting, which leaves the team open to ambush en route or on site. When inside a shop or house, the personal security detachment may be tempted to let their guard down and be part of the process, which must be discouraged. If at all possible, meeting at a vendor's house should be avoided. Having the vendor meet the FOO at an established base camp is the safest method for

Troop-level ISR Planning and Execution

by Major Jonathan Muenchow

"Because of what we've learned in combat, we're now putting people through training scenarios where there's no solution. In the past, you were measured on how you complied with doctrine and used it to organize and accomplish your objective. …We want an adaptive organization full of problem solvers. We want them to know how to think, not just what to think."

— General Peter Schoomaker,
Chief of Staff, Army

As indicated by General Schoomaker's statement above, today's nonlinear operational environment requires multidimensional thinking, planning, and execution where leaders and soldiers alike must be prepared to fight the "three-block war."[1] Leaders at all levels require information in the form of intelligence to help solve problems, make decisions, and maintain situational awareness (SA). How we collect and manage information is critical. A key aspect of this dynamic is the ability of troop and company commanders to incorporate intelligence, surveillance, and reconnaissance (ISR) into planning and execution for all operations and express

their intent for ISR in the form of reconnaissance focus.[2]

Leaders must understand that reconnaissance is a continuous process conducted during all missions from raids and combat patrols to movement and contact. As defined by U.S. Army Field Manual (FM) 3.20-95, "reconnaissance is a focused collection effort. It is performed before, during, and after other operations to provide information used in the intelligence preparation of the battlefield (IPB) process, and the military decisionmaking process (MDMP) for the commander and staff to formulate, confirm, or modify the concept, and to acquire and attack targets to support the targeting process."[3] For the troop or company commander, this all boils down to three basic questions:

• What information do we need to bring the fight to the enemy?

• What information does higher headquarters need for planning and targeting?

• How do we focus our eyes and ears on finding that information during the execution of all operations?

The troop or company commander is the critical linchpin between soldiers on the ground executing operations and the headquarters planning future operations. The commander's ability to answer the first two questions and express them in a clear and concise reconnaissance focus is essential. Not only will this help platoons maintain an offensive mindset, but it also ensures that all unit actions are focused on the higher headquarters' endstate. Unfortunately, not all troop and company commanders have a strong grasp of the fundamentals of ISR planning and operations and how they impact mission execution. As a result, information collection, one of the five activities of information management as described in FM 3-20.971, is not completely achieved.[4] Fortunately, for the time-strapped commander, ISR planning does not need to be all consuming.

Doctrine for ISR generally addresses the battalion/task force staff, as the troop or company is viewed as one of the resources to execute the ISR plan. As a result, most doctrine for the troop and company covers the fundamentals of reconnais-

sance, security, and the critical tasks of each mission, but does not address the 'how and why' of ISR. The lack of clear doctrine should not stop the troop or company commander from developing his own ISR plan integrated with his higher headquarters. Essentially, there are six steps the commander takes to develop and execute an ISR plan:

• Establish common operating picture (COP)/situational awareness.

• Determine commander's critical information requirements (CCIR)/information requirements (IR).

• Develop reconnaissance focus.

• Receive and pass reports.

• Modify/adjust reconnaissance focus.

• Gather feedback from higher.

Overlaid on the collection management cycle, a systematic approach to ISR planning and execution may look like the following:[5]

Step 1: Develop requirements. The commander must develop a valid and integrated ISR plan to establish situational awareness throughout his area of operations (AO) and gain a solid understanding of his higher headquarters' concept for future operations and lethal and nonlethal targeting. The two keys to this are: building the same COP as the higher headquarters' tactical operations center (TOC); and getting boots on the ground. As much as possible, the unit's command post must replicate the COP displayed in the higher headquarters' TOC. This includes copies of the S2's pattern analysis tools, the S3's operational graphics, and outputs of the

lethal and nonlethal targeting meetings. By having this information, the troop commander and platoon leaders are better able to plan for operations and "see" what higher is seeing.

Even with an integrated COP, the commander cannot truly understand his AO unless he leaves the forward operating base (FOB) and explores his surroundings. He can accomplish this by accompanying subordinate units on missions and by meeting local leaders. Just getting out and seeing what his subordinates see will assist the commander in developing his information requirements.

Once the commander has identified his AO and essential tasks during mission analysis, he can determine what CCIR/IR he can expect his platoons to answer based on his understanding of the AO and what relevant information his higher headquarters is seeking. FM 3-20.971 describes relevant information as "all information of importance to the troop commander and to higher headquarters in the exercise of command and control."[6] What information does the S2 need to support his pattern analysis, which may lead to the S3 planning a mission to disrupt that pattern? What indicators are the squadron seeking that may trigger a decision to conduct a raid against suspected enemy forces within the troop AO? What intelligence gaps exist in the targeting process? The commander pulls this information from the squadron CCIR and IR, the lethal and nonlethal targeting lists, and his own information requirements. Once the commander has determined the IR, he can develop his reconnaissance focus.

Step 2: Develop collection plan. Reconnaissance focus is how the commander prioritizes the information required to bring the fight to the enemy and the information higher headquarters requires for planning and targeting. Doctrine characterizes this information by threat, society, infrastructure, and terrain, and how it relates to the higher headquarters' information requirements.[7] The amount of time units have been in the AO, the types of missions being considered, and the targeting process all effect the focus. As a minimum, reconnaissance focus should: address key reconnaissance or security tasks to be executed in the form of threat, society, infrastructure, and terrain; and translate how the commander envisions taking the fight to the enemy in the form of purpose/intent.

Coupled with the commander's CCIR and higher headquarters' CCIR, this provides platoon leaders with a clear understanding and picture of what relevant information to look for and how it affects the fight.

Step 3 and 4: Task or request collection and disseminate. Reconnaissance focus can come in the form of the commander's reconnaissance guidance, which covers focus, tempo, and engagement criteria, or may simply be a subsection of paragraph three to the operations order (OPORD) or fragmentary order (FRAGO).[8] Regardless of the format used, the key is that it can be clearly understood and supports both the unit's and higher headquarters' information requirements. To ensure subordinates understand the reconnaissance focus and ISR plan, the commander must integrate them into his rehearsal. Subordinates should backbrief the reconnaissance focus and CCIR and the commander should involve at least one action during the rehearsal that either answers a CCIR or relates to the reconnaissance focus.

Step 5: Evaluate reporting. During and after mission execution, the commander must have a plan or system in

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"After several weeks of successful operations, IED and small arms ambushes decrease and the unit can focus more resources on rebuilding the local infrastructure, thereby gaining support from the population. Based on MOE (decreased attacks, decreased IEDs, increased information volunteered by the population), the commander once again adjusts his reconnaissance focus adding infrastructure and society components to support the rebuilding effort."

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place for how he will gather information from platoons and how he adjusts recon focus. Reporting and information flow is always a focus for scouts and should be standard operating procedure within any unit. However, if the commander has not built a thorough ISR plan, he probably has not thought about how or what to shift his platoon's reconnaissance focus to during operations. If his platoons answer a CCIR or an IR, the commander and command post must know whether the information was passed higher, to whom the information was passed and how the information was passed — the information effects the reconnaissance focus. If the commander has visibility of the squadron's planning process, he can anticipate how different answers to CCIR effect his own reconnaissance focus. With a general knowledge of this information, the commander is prepared to shift his recon focus rapidly during execution.

The commander also needs to address how the troop collects and passes information after the unit returns to the FOB; prepare a standard format for a patrol debrief; monitor who conducts the patrol debrief and where; observe how well the command post understands the ISR plan; and decide how to handle CCIR/IR and how that information is passed to higher headquarters. These procedures may seem simple, but they are not something cavalry and armor units routinely train.

Step 6: Update collection plan. The commander must be ready to adjust his reconnaissance focus as the situation changes or develops. Changes to his recon focus may be driven by external events, internal events, or by feedback from higher about the information his unit is collecting. Regardless of the source, the commander must be prepared to adjust his focus as required to ensure he is collecting the most relevant data in the fluid contemporary operating environment. The commander must remain actively involved in focusing his units to gather valuable information that he can use to conduct enemy attacks and his higher headquarters can use in their planning and targeting processes.

A commander can establish measures of effectiveness (MOE) to help him determine whether or not he needs to adjust his reconnaissance focus. MOE is quantifiable data that indicate the effectiveness of actions in achieving MOE/supporting tasks.[9] Basically, MOE are the indicators that aid the commander in assessing whether or not his operation is having the desired effect. If the intent of an operation, or series of operations, is to disrupt or defeat insurgent activity in a certain AO, then supporting MOE may include decreased ambushes, decreased IED events, an increase in human intelligence (HUMINT), and a friendly or more receptive population. MOE help the commander evaluate and adjust his reconnaissance focus over an extended period of time as he works toward achieving his endstate.

The commander also updates his collection plan through feedback from higher headquarters, which is based on reports his unit submits and pattern analysis changes. Feedback is important for two reasons. First, it allows the commander to show cause and effect to his soldiers. If the higher headquarters executes a raid based on information reported, the commander can use that to reinforce to his soldiers the importance of their mission and the value of continuous reconnaissance. Second, the commander can evaluate his own ability to develop and infer relevant information.

Through interaction with the commander, S2, and S3, the troop commander can determine if he is providing the right information, and if not, why. The commander uses this information to adjust his future ISR planning and reporting processes. Changes made to the S2's pattern analysis also effect the troop or company

commander's reconnaissance focus. As the enemy adjusts his operations to counter our actions, we must then adjust our recon focus to look for and identify new patterns, subsequently attacking those patterns. At the completion of this step, the commander is then prepared to continue the collection management cycle while keeping his soldiers focused on finding relevant information to support both the troop and higher headquarters.

The following vignette shows the process for a troop or company commander executing an ISR plan in the field:

Alpha Troop conducted a transfer of authority three months ago and has been executing daily convoy escort missions throughout the squadron AO, as well as combat patrols in the troop AO to deter/defeat insurgents. In the past two weeks, there has been a steady increase in the number of IED attacks against U.S. patrols throughout the squadron AO. Based on pattern analysis, the S2 developed a series of named areas of interest (NAIs) across the squadron sector. Three of these NAIs are in the troop AO. Having traveled with several patrols by the identified locations, the commander knows that each one has at least two egress points for insurgents to use after detonating an IED. The troop commander has discussed these locations with the S3, and the squadron has established targets on each route and integrated them into the targeting process. The troop commander determines that based on his missions, the following is relevant information for his counter-IED efforts:

• IED/insurgent activity that supports the S2s pattern analysis.

• IED/insurgent activity that indicates a new pattern.

"Although reconnaissance and security operations are not key tasks for most operations executed on today's battlefield, a troop or company commander cannot ignore the importance of ISR integration. A clear and concise ISR plan supports the collection of relevant information and keeps soldiers in an offensive mindset, hunting for the enemy and for information."

• *Locations of potential hide sites for command detonation of IEDs and location of ingress/egress routes.*

• *IED emplacement times and patterns (supports lethal targeting by giving window for observers).*

From his list of relevant information, he develops the following priority intelligence requirements (PIR) to support the IED NAIs:

• *IED or insurgent activity vicinity NAIs 1-3.*

• *Any activity vicinity target area of interest (TAI) 1-3.*

• *Newly dug holes or disturbed earth on any MSR.*

The commander then issues the following reconnaissance focus in his OPORD:

"Confirm TAIs 1-3 as possible ambush locations overwatching NAIs 1-3 and identify counterattack routes into those positions in order to (IOT) set the conditions for counter-IED ambushes. Determine IED emplacement times/methods through HUMINT and observation of IED placement indicators (insurgent recon/rehearsal, newly dug holes or disturbed earth, components emplaced/not armed) IOT allow the squadron to refine its lethal targeting plan."

In conjunction with the PIR, this provides platoon leaders a focus outside of their assigned convoy escort and combat patrol missions that keeps them working toward taking the fight to the enemy.

During execution of operations the following day, the convoy escort platoon identifies three four-feet by two-feet holes spaced approximately 50 meters apart along the MSR in an adjacent troop's sector. Because this is a PIR for the troop commander and part of his reconnaissance focus, the platoon leader immediately reports the incident. Identifying this as an indicator of IED preparation, the commander relays this information to the adjacent troop and to the squadron. The S3 and fire support officer (FSO) use this information to refine their lethal effects plan and adjust unmanned aerial vehicle (UAV) coverage to overwatch the location. As a result, the squadron is able to destroy four insurgents as they attempt to emplace three 152mm IEDs during the night. The commander relays this information to the platoon as a job well done and reinforces the importance of continuous reconnaissance/observation during all operations.

Based on the commander's reconnaissance focus, the platoon on combat patrol questions locals about suspicious or unusual activity near each of the three NAIs and develops detailed overlays of possible counterattack routes and ambush points around TAIs 1-3. They report that a local shopkeeper, whose store is near NAI 2, has seen a white van stop along the roadside every night between 2300 hours and 0100 hours, just prior to an IED explosion. The commander adds identification and search of any white van to his reconnaissance focus and directs his third platoon to conduct snap traffic control points (TCPs) from 2200 hours to 0200 hours. During one such TCP, 3d Platoon stops a white van heading toward NAI 2. While searching the vehicle, they find several IEDs hidden in the floorboards and detain the occupants. Several days later, the commander follows-up on the detainees and is informed that they were paid to bury the explosives in holes that had already been dug and they would mark the site with two pickets spaced 50 meters apart on either side of the IED ambush. However, they had no information on who carried out the actual ambush. The commander adjusts his reconnaissance focus and PIR to include this information and works with the S2 to update the pattern analysis and IED placement indicators.

A week later, during combat patrol debriefs, the troop XO discovers that there is a newly emplaced pile of rocks near NAI 1 and several pickets were placed about 50 meters apart on either side of the rock pile. It was not reported because the platoon was focused on a vehicle that was moving erratically and attempting to pass their convoy at the time they crossed NAI 1. Based on this information, the troop commander coordinates with the S3 to conduct a counter-IED ambush on TAI 1. Using the squadron UAV and two platoons, the troop establishes overwatch on the ingress and egress routes of the suspected ambush initiation point. Several hours later, UAV and scouts identify five personnel moving by foot into the area. Through observation with long-range advanced scout surveillance system (LRAS) and UAV, they identify rocket propelled grenades and small arms. The engagement is brief but lethal. As the scouts clear the objective, they discover a remote initiation device and the explosive ordnance disposal team detonates four 152mm IEDs located in the rockpile.

After several weeks of successful operations, IED and small arms ambushes decrease and the unit can focus more resources on rebuilding the local infrastructure, thereby gaining support from the population. Based on MOE (decreased attacks, decreased IEDs, increased information volunteered by the population), the commander once again adjusts his reconnaissance focus adding infrastructure and society components to support the rebuilding effort.

Even though the troop did not have a reconnaissance mission, the troop commander took the time to develop an ISR plan, issue reconnaissance focus, and update/adjust his plan and focus as the situation changed. As a result, his leaders and soldiers remained offensively focused and were able to identify several IED sites and destroy insurgents. This generalized and simple vignette hopefully captured how easy it is for a commander to develop, issue, and refine an ISR plan that supports the needs of higher headquarters and keeps subordinates focused on bringing the fight to the enemy.

Although reconnaissance and security operations are not key tasks for most operations executed on today's battlefield, a troop or company commander cannot ignore the importance of ISR integration. A clear and concise ISR plan supports the collection of relevant information and keeps soldiers in an offensive mindset, hunting for the enemy and for information. The commander accomplishes ISR integration by maintaining a similar COP to his higher headquarters and understanding how CCIR effect mission planning and execution, and what branches and sequels the higher headquarters has planned around those CCIR. All of this information is expressed in the commander's reconnaissance focus, which is tied to CCIR, targeting, and relevant information requirements. Finally, the unit must have a method for identifying and reporting relevant information and adjusting focus during execution. By integrating ISR into all troop- and company-level operations, commanders ensure units remain offensively focused and support the higher headquarters' planning and targeting processes. Simply stated, good units do the mission; great units do the mission and gather relevant information to take the fight to the enemy in support of the higher headquarters.

Notes

[1]General Charles C. Krulak, "The Strategic Corporal: Leadership in the Three Block War," *MARINES*, January 1999; "*the three block war* — contingencies in which Marines may be confronted by the entire spectrum of tactical challenges in the span of a few hours and within the space of three contiguous city blocks."

[2]U.S. Army Field Manual (FM) 3-20.971, *Reconnaissance Troop, Recce Troop, and Brigade Recon Troop*, U.S. Government Printing Office (GPO), Washington, DC., 2 December 2002, Chapter 3, para 3-36.

[3]FM 3-17.95, *Cavalry Operations*, GPO, Washington, DC, 24 December 1996.

[4]FM 3-20.971, Chapter 2, para 2-16.

[5]FM 3-90.2, *The Tank and Mechanized Infantry Battalion Task Force*, GPO, Washington, DC, 11 June 2003, Chapter 4.

[6]FM 3-20.971, Chapter 2, para 2-18.

[7]FM 3-20.971.

[8]FM 3-20.971, Chapter 3, para 3-34 thru 3-38.

[9]Effect Based Operations Video Teleconference presentation, Joint Readiness Training Center, Fort Polk, Louisiana, and National Training Center, Fort Irwin, California, 17 March 2004.

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Field Ordering Officer

the FOO team. However, the vendor again becomes vulnerable to observation by insurgents. Using a vendor who lives outside of the city or neighborhood in which the FOO operates can alleviate the problem. Using periods of darkness or early morning hours can also limit observation. Every effort must be made with the unit guarding the gate to conceal the vendor and rapidly move him inside the compound.

An agreed-on location is another excellent form of meeting. The vendor may be wary of meeting the FOO at his base camp but amenable to meeting at another camp. The vendor may desire a roadside meeting. By coordinating with combat forces, the FOO can conduct a meeting at a checkpoint under the ruse of a vehicle inspection. The same dangers exist as the house meet. The vendor's awareness of the team's location and movement time leave the team vulnerable to ambush or improvised explosive device (IED) attack. During all FOO operations, maintaining a level of unpredictability is key to avoiding deliberate ambushes.

Some other methods for conducting purchases involve a number of unforeseen facets. Iraqis have been businessmen and traders since the Silk Road. Bartering is part of every deal and everything is negotiable. Expect vendors who have an established relationship with a FOO to offer gifts and money as a "cut" of the deal. This is customary in Iraqi business and should not be seen as a blight on the character of the vendor. The FOO must make it clear from the beginning that he is not permitted to accept gifts and money. Do not use the Iraqi dinar; if vendors want to make money, they will find a way to work in U.S. dollars. The speed and stress level under which transactions are completed can lead to confusing math and tracking problems. A system for managing the money must be used. A checkbook-style ledger or money management software program is a crucial asset for a FOO team.

The FOO is a powerful tool for a battalion operating in Iraq. With limited supply lines open, the FOO often is the only supply source. Effective planning and training prior to deployment pays big dividends to a FOO team. An effective FOO can boost morale, improve quality of life, improve the Iraqi economy, build positive working relationships with Iraqis, and provide the supplies necessary for conducting operations. By manipulating the staggeringly complex bureaucracy, finding the supplies, and safely conducting combat operations, the FOO can be a powerful combat multiplier.

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The Ch'onma-ho Main Battle Tank:

A Look at the Present and Future of North Korea's "Flying Horse"

by James M. Warford

"Seeing tankmen overcome in a moment difficult conditions, such as mountains and valleys, marshes and rivers, and charge toward 'enemy' positions, he noted with great satisfaction, that all tankmen have deep hatred for the enemy and a high spirit of devotion to the country and people, and are fully prepared in military technique to cope with modern warfare, each being a match for a hundred foes."[1]

On 25 April 1992, a large parade was held in Pyongyang, North Korea, to celebrate the 60th anniversary of the North Korean People's Army. While many known and some unknown new weapons systems participated in the parade, per-haps the most interesting was the extensively modified North Korean T-62A main battle tank (MBT), known as the Ch'on-ma-ho, which translates to "Flying Horse" or "Pegasus." This tank, based on the Russian T-62A, not only represents an important example of North Korea's efforts toward modernization and self-reliance, it also provides a very rare glimpse at the status of North Korean tank development.

While an old design by today's standards, the upgraded Russian T-62A tank incorporates some significant improvements over the original T-62. Beginning in 1983, the Soviets started to significantly upgrade the capabilities of their T-62s (now known as the T-62M) to include an improved fire control system, an externally-mounted laser rangefinder mounted above the tank's 115mm smoothbore main gun, a more powerful 620-horsepower engine (up from 580), improved suspension components, and the addition of BDD (Brow) add-on armor to the turret front and hull glacis. Adding BDD armor is particularly significant because it is credited with adding 120mm of protection against armor-piercing discarding sabot (APDS) ammunition and 200 to 250mm of protection against high-explosive antitank (HEAT) ammunition. Fitted with BDD armor, the 60-degree frontal arc of the T-62M is immune to U.S.

and NATO 105mm APDS and HEAT ammunition.

In most cases, the T-62M upgrade also included the 9K116-1 main gun launched antitank guided missile (ATGM) system. Russian T-62s not equipped with this system were designated as the T-62M1. The 9M117 Sheksna missile fired by the T-62M and designated as the AT-12 by NATO has a maximum effective range of 4,000 meters. According to the Russians, the latest version of this missile, known as the 9M117M, is fitted with a new tandem HEAT warhead. This new missile reportedly penetrates 550mm of conventional armor protected by an external layer of explosive reactive armor (ERA).

In 2003, the Russians announced an even more extensive upgrade package for the T-62, simply referred to as the "modernized T-62." This package includes replacing the original 115mm main gun with a new 120mm main gun, adding a new fire control system that incorporates a thermal night sight and built-in laser rangefinder, and upgrading the engine with a new 690-horsepower engine. Additionally, this upgrade package includes the advanced built-in ERA that looks similar to the Kontakt-5 reactive armor, which is used to protect the more advanced T-80U MBT.

While these modifications incorporated into the T-62M are fairly well known, there are other variants of the T-62M and T-62M1 that complicate the identification of each variant. These other modifications include using different engines, not fitting the complete BDD armor arrays, and the application of the initial version of Kontakt ERA. These T-62M variants, fitted with Kontakt ERA, are designated as the T-62MV. Over the years, the T-62M has proven to be a successful and widely deployed battlefield workhorse, and has seen combat in various locations globally, to include Chechnya, and more recently, Afghanistan.

Like the Russians, the Ukrainians realized that to maintain their position as a viable force in the international military export market, they needed to develop an upgrade package for the T-62 as well. Also designated as the T-62M, the recently announced Ukrainian upgrade program includes the use of a new fire control system, incorporating a combined day-night sight, an externally-mounted laser rangefinder, two-axis gun stabilization, and a digital computer. The Ukrainian T-62M is also capable of mounting either the KBM2 120mm or the KBA3 125mm main guns (both of which can fire Ukrainian-designed ATGMs). The tank

is powered by the 5TDF 700 horsepower engine and is also fitted with new Ukrainian modular reactive armor. While both the Russian and Ukrainian T-62M upgrade packages successfully breathed new life into the old T-62 design and provided the capabilities for the tank to remain a threat on today's battlefields, they also provide a glimpse of what can be expected from the North Korean Ch'onma-ho.

The North Korean Ch'onma-ho MBT remains one of the most mysterious tanks currently in use around the world. While very little detailed information is known about this tank, there is enough available information to provide a general description and overview. To date, the only available photographs of the Ch'onma-ho are a few poor-quality images that were taken during the massive military parades held in Pyongyang. The secrecy surrounding the Ch'onma-ho could be an example of the North Koreans copying the old Soviet behavior of keeping selected high-priority weapons systems hidden from prying eyes.

While most published sources report that North Koreans acquired Russian T-62 tanks in the 1980s, some sources claim that these tanks were actually acquired much earlier. According to a former North Korean army colonel who defected to South Korea in 1999, North Korean "agents" stole the blueprints of the T-62 from Syria in the late 1970s. These blueprints were reportedly used to develop the North Korean version of the T-62. While it is not known exactly when or how the "new" T-62 was acquired, the Ch'onma-ho has since become a serious concern to the South Korean military.

According to the available information, the name "Ch'onma-ho" actually refers to a series of North Korean tanks that relate to upgraded versions of the original Russian T-62A. According to the published 1998 and 1999 South Korean Defense White Papers, the South Korean military has apparently identified at least two different modified T-62 variants. The white papers explain that the North Koreans have put larger guns on their "T-62 tanks," in addition to producing "new Ch'onma-ho tanks." However, the 2000 South Korean Defense White Paper describes the new tanks as "domestically produced T-62 Ch'onma-ho tanks that feature larger caliber munitions." Additionally, in 2001, U.S. military officials reported that the North Korean version of the T-62 is being armed with a larger gun and that this variant of the tank is known as the Ch'onma-ho. This information would seem to confirm that there are at least three variants in the Ch'onma-ho series. Interest-

ingly enough, the same U.S. military officials confirmed that the North Koreans resumed tank production after a ten-year shutdown.

It now appears that the Ch'onma-ho MBT series includes as few as three and perhaps as many as seven different variants. The tanks that were paraded in Pyongyang in April 1992 are certainly the most advanced variant seen to date and confirm the development of a North Korean tank with the capabilities of the Russian and Ukrainian T-62M MBTs. It is likely that the North Koreans felt a significant upgrade of earlier Ch'onma-ho variants was necessary to remain competitive with the "new" South Korean 105-mm-armed K1 MBT, which has been in service with South Korea's army since 1986.

Most likely, the 1992 variant of the Ch'onma-ho is actually the Ch'onma-ho III. Additionally, unconfirmed reports of a command variant and armored recovery vehicle (ARV) variant of the Ch'onma-ho series continue to make tracking these tanks a challenge. Based on the available information, the different variants of the Ch'onma-ho series are likely identified as follows:

• Ch'onma-ho I – slightly modified copy of the Russian T-62A with 115mm main gun and 14.5mm anti-aircraft machine gun.

• Ch'onma-ho II – upgraded Ch'onma-ho I, incorporating an externally mounted laser rangefinder above the main gun.

• Ch'onma-ho III – first seen during the parade in 1992, incorporating a laser rangefinder above the 115mm main gun, a thermal shroud on the main gun, full-hull skirting, turret smoke grenade launchers (two sets on each side of the turret), add-on armor to the turret front and possibly the glacis, what appears to be ERA "bricks" on the turret sides (from the turret midpoint back to the turret rear), and an improved fire control system.

• Ch'onma-ho IV/V – upgraded variant fitted with the "larger gun" (reliable reports say that this larger gun is in fact the 125mm main gun – with autoloader – from the Russian T-72 MBT).

While reports concerning the "larger gun" variant of the Ch'onma-ho confirm that this variant exists and is fitted with the 125mm main gun, they are not the only tanks in the North Korean army that have this level of firepower. According to unconfirmed reports, North Korea received a small number of Russian T-72s for evaluation, testing, and to support the potential establishment of an internal

"While an old design by today's standards, the upgraded Russian T-62A tank incorporates some significant improvements over the original T-62. Beginning in 1983, the Soviets started to significantly upgrade the capabilities of their T-62s (now known as the T-62M) to include an improved fire control system, an externally-mounted laser rangefinder mounted above the tank's 115mm smoothbore main gun, a more powerful 620-horsepower engine (up from 580), improved suspension components, and the addition of BDD (Brow) add-on armor to the turret front and hull glacis."

T-72 production capability. It has also been reported that North Korea acquired a single T-90S MBT from Russia in August 2001 for testing and evaluation. The future of the Ch'onma-ho series of tanks is clearly based on the financial capabilities of North Korea's economy. The production and continuing deployment of these upgraded MBTs will, for the foreseeable future, be tied to the performance of North Korea as a whole.

In spite of the status of North Korea's economy, reports concerning an *even newer tank* developed by North Korea began to appear in the defense-related press during July 2002. Reportedly, this new tank was developed by the Ryu Kyong-su tank plant in Shinhung and completed performance trials on 16 February 2002. These reports followed a well-publicized trip to Russia by North Korean leader Kim Jong-il in August 2001. The focus of this trip may have been on shopping since, after traveling to Russia in his 21-car armored train, Kim visited the Omsk Trans-Mash tank plant, the makers of the Russian T-80U tank series. According to published reports, this new North Korean tank has capabilities that "are nearly identical to those of the T-90 tank Russia developed in the early 1990s." It was also reported during Kim's trip to Russia that North Korea wanted to buy an "upgraded" T-90 recently developed by the Russians. While the North Koreans had apparently been attempting to get additional help from Russia to develop their tanks

for some time, Russian sources report these new 125mm-armed MBTs were developed by the North Koreans with help from Iran. In spite of these reports, the relationship between Russia and North Korea remains strong; as seen by the participation of a senior North Korean military officer during Russian celebrations in May 2005, marking the anniversary of the victory in World War II. Perhaps the highlight of these celebrations was the traditional military parade in Red Square, which included, for the first time, Russian T-80BV MBTs. Exactly why that particular Cold War-era tank was paraded during that particular parade remains a mystery.

Certainly, the development and production of the Ch'onma-ho series of MBTs represents an impressive achievement for North Korea. This is especially true with the 125mm-armed variant since it has the firepower necessary to be a threat on future Korean battlefields. While the small number of T-72s and the single reported T-90S are too few to pose a real threat, they have paved the way for the reported development of a new North Korean T-90-equivalent MBT. This latest tank development may not only be a crowning achievement of the North Korean military's efforts toward self-reliance, it may also be driving the continuing development of new tanks in South Korea. In addition to the production and deployment of their own 120mm-armed K1A1 MBT, the South Korean military has con-

firmed that a new sophisticated tank, known as the Korean Future Main Battle Tank (KFMBT), is being developed in South Korea. Apparently, the threat posed by the North Korean Ch'onma-ho tank series (the most recent 125mm-armed tanks in particular), along with the new North Korean T-90 equivalent tank, is significant enough to drive the continuing development of a new tank for South Korea's army.

Notes

[1]A description of Kim Jong-il's observation of a military exercise involving tanks from the North Korean army's "Guard Seoul," 105 Tank Division on 1 December 1996.

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Six-Day War

of survival for the infantry soldier. The Israelis have proven that infantry soldiers working closely with armor units stand the best chance for battlefield success in an urban environment. The infantry perform near security for the tank, protecting vulnerable areas, and providing greater situational awareness. The tank provides a shield for the infantry as well as increased firepower and shock effect. The U.S. military has demonstrated an understanding of this lesson — it fought with task forces (armor and infantry combinations) during OIF and is currently restructuring unit organizations so that units are arranged in task forces in garrison and on deployments.

The analysis of the Six-Day War using the nine principles of war provides a distorted picture of what happened. If taken at face value, it would appear that Israel clearly won the war. Israel's actions reflect an understanding of the nine principles of war, which indicates Israel understood and applied these principles and won the Six-Day War. However, this view disregards the Arab coalition's role in this conflict. The Arab's inability to successfully apply most of the nine principles of war doomed them to failure. Had they applied one or more of the principles, especially the unity of command, the outcome of this war may have been tremendously different. The Arab coalition's superior military power and positions should have easily overwhelmed the smaller Israeli army. The true picture of the Six-Day War is not that Israel won, but that the Arab coalition lost.

The similarities on an operational and tactical level between the Six-Day War and Operation Iraqi Freedom are also noteworthy. These similarities reinforce the importance of learning from military history and applying it to present day whenever possible. The U.S. coalition demonstrated that it learned lessons on conducting an urban fight from Israel's experiences. However, the bigger lesson that the U.S. needs to learn comes from Israel's 40 years of experience with fighting insurgents. Israel understands that this type of fighting is won by strength of will.[33] Israel had no choice but to learn this lesson — its very existence rests on continually and ceaselessly engaging its enemy.

Iraqi and Arab cultures generally view the western world as weak willed and hedonistic. They do not believe that the United States has the internal fortitude to support an expensive war (in lives and money) in the Middle East. Insurgents understand this and hope to erode public support for the current military occupa-

tion by fighting an unconventional war. However, if the United States and its allies are serious about establishing an Arab democracy, they will need to learn from Israel's example. They will have to demonstrate the will necessary to defeat a long and difficult unconventional fight.

Notes

[1]U.S. Army Field Manual (FM) 3-0, *Operations*, U.S. Government Printing Office, Washington, D.C., June 2001, p. 4-33.

[2]Ibid., p. 4-35.

[3]Michael B. Oren, *Six Days of War: June 1967 and the Making of the Modern Middle East,* Presidio Press, 2002, p. 153.

[4]Ibid., p. 58.

[5]Ibid., p. 59.

[6]Ibid.

[7]Oren, p. 214.

[8]FM 3-0, p. 4-38.

[9]Ibid.

[10]Oren, p. 87.

[11]FM 3-0, p. 4-39.

[12]Oren, p. 161.

[13]FM 3-0, p. 4-42.

[14]Oren, p. 183.

[15]FM 3-0, p. 4-43.

[16]Oren, p. 88.

[17]Cham Herzog, *The Arab Israeli Wars: War and Peace in the Middle East from the War for Independence to Lebanon,* Vintage Books, 1984, p. 171.

[18]Oren, p. 180.

[19]FM 3-0, p. 4-44.

[20]Oren, p. 162.

[21]Ibid., p. 160.

[22]FM 3-0, p. 4-46.

[23]Ibid., p. 4-47.

[24]Oren, p. 171.

[25]Ibid., p. 166.

[26]FM 3-0, p. 4-48.

[27]Herzog, p. 189.

[28]Ibid., p. 190.

[29]Edward W. Said and Christopher Hitchens, *Blaming The Victims*, Verso, London, 2001, p. 7.

[30]Ibid., p. 102.

[31]Oren, p. 209.

[32]Bernard *Lewis*, *The Crisis of Islam: Holy War and Unholy Terror*, Modern Library, New York, 2003, p. 81.

[33]Ralph Peters, *Beyond Baghdad: Postmodern War and Peace*, Stackpole Books, 2003, p. 51.

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Learning and Transformation

[3]Michael Evans, "From Kadesh to Kandahar: Military Theory and the Future of War," accessed on line at *http://www.nwc. Navy.mil/press/Review/2003/Summer/art6-su3.htm*, issued during School of Advanced Military Studies (SAMS) curriculum, Fort Leavenworth, KS, p. 11.

[4]Ibid.

[5]Joint Staff, J-7, *An Evolving Joint Perspective: U.S. Joint Warfare and Crisis Resolution in the 21st Century*, GPO, Washington, DC, 28 January 2003, p. 4.

[6]Ibid., p. 11.

[7]Ibid.

[8]United States Joint Forces Command (USJFCOM), *The Joint Operational Environment—Into the Future*, Coordinating Draft, USJFCOM, 5 March 2004, pp. 86-99. This theoretical concept was further developed during seminar discussion with Dr. Schneider.

[9]The 9/11 Commission, *Final Report of the National Commission on Terrorist Attacks Upon the United States* (Official Government Edition), GPO, Washington, DC, 2004, p. 406.

[10]Ibid.

[11]David T. Culkin, A699 Paper, "Personal Theory of Warfare," U.S. Army Command and General Staff College, Fort Leavenworth, KS, 2004, p. 2.

[12]Eliot A. Cohen and John Gooch, *Military Misfortunes: The Anatomy of Failure in War*, The Free Press, New York, 1990, p. 236.

[13]James J. Schneider, "Transforming Advanced Military Education for the 21st Century," *Army*, January 2005, p. 17. Dr. Schneider, Professor of Military Theory at SAMS, also allowed use of his class notes and slides (Figure 2) from his Advanced Military Studies Program elective on T.E. Lawrence, January 2005.

[14]David S. Alberts and Richard E. Hayes, *Power to the Edge: Command, Control in the Information Age*, CCRP Publications Distribution Center, June 2003, p. 24. Issued during AMSP doctrine instruction, 2005.

[15]Ibid., pp. 23-24.

[16]Gary Klein, *Sources of Power: How People Make Decisions*, The MIT Press, Cambridge, 1998, p. 143.

[17]Dietrich Dorner, *The Logic of Failure: Recognizing and Avoiding Error in Complex Situations*, Basic Books, New York, 1996, p. 199.

[18]FM 3-0, *Operations*, GPO, Washington, DC, 14 June 2001; FM 5-0, *Army Planning and Orders Production*, GPO, Washington, DC, 20 January 2005; Joint Publication (JP) 5-0, *Doctrine for Planning Joint Operations*, GPO, Washington, DC, 13 April 1995; and JP 3-0, *Doctrine for Joint Operations*, GPO, Washington, DC, 10 September 2001.

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REVIEWS

The Iraq War: A Military History by Williamson Murray and Major General Robert Scales, Belknap Books, Harvard University Press, Cambridge, MA, 2003, 368 pp., $25.95 (hardcover)

Within a year of its beginning, the 2003 Iraq War generated a string of books about its political, social, and military implications. No doubt, the tactics and military strategy of this war will be debated and analyzed for years to come. For those who wish to begin their journey toward understanding how the United States and coalition forces quickly defeated Saddam Hussein, this book by Murray and Scales is an excellent start.

Readers will be introduced to the current tacticians of the Iraq War, such as Lieutenant General David McKiernan, whose focus was destroying Iraqi ground forces en masse using the I Marine Expeditionary Force (MEF) and the Army's V Corps. The V Corps was to proceed from the south to the west of the Euphrates River and then turn northeast into Baghdad; its lead element was the 3d Mechanized Infantry Division, reinforced with the 101st Airborne Division and a brigade from the 82d Airborne Division. Readers will understand the combat power and task-organized capabilities these units brought in terms of Abrams tanks, Bradley fighting vehicles, and Apache attack helicopters. Lieutenant General William Wallace was in command of V Corps.

The I MEF, commanded by Lieutenant General James Conway, crossed the Euphrates River and drove through the heartland of Iraq, crossing the Tigris River and attacking Baghdad from the east. Close air support for V Corps was provided by U.S. Air Force A-10 Warthogs and British Royal Air Force Harriers, the Marines had their own Cobras, Harriers, and Hornets that reinforced their drive northwest and then east. *The Iraq War: A Military History* covers the complex planning of this force that sprang into action on 20 March. Task Force Tarawa, comprised of two Marine Expeditionary Units (MEUs), along with British forces, attacked from the sea and secured the area from Southern Iraq to Al-Nasiriyah. British infantry, made up of the 7th Armored Brigade (the famed descendants of the World War II Desert Rats), would conduct urban fighting to break Baath resistance

The book is a comprehensive loom of the Iraqi war and covers equipment, joint operations, and much more. *The Iraq War: A Military History* is highly recommended for those en route to Iraq.

YOUSSEF ABOUL-ENEIN
LCDR, USN

Blitzkrieg to Desert Storm: The Evolution of Operational Warfare by Robert M. Citino, University Press of Kansas, Lawrence, KS, 2004, 424 pp., $39.95 (hardcover)

A part of the *Modern War Studies* series, Professor Citino provides a brilliant analysis of operational warfare from World War II to the pres-

ent. The author interestingly integrates the wisdom of Count Alfred von Schlieffen, Chief of the German General Staff, in both the introduction and conclusion of his work when he quotes, "a book lies before each man who wishes to become a commander, and it is entitled 'Military History.'" Citino examines the military history of 20th-century warfare, so often overlooked and dismissed by many military officers, to focus attention on operational-level warfare and demonstrate the utility of maintaining this focus as we continue to be an Army at war.

The book begins with an examination of the years leading up to World War II, as commanders continued to fail in achieving decisive victory on the battlefield due to problems with command and control and information flow (or lack thereof) up to the deadly stalemate of trench warfare. This background provides an excellent foundation for demonstrating the lessons learned by the Wehrmacht as Germany entered and dominated the first two years of World War II. Much of their success, Citino points out, is attributed to flexibility in operations and directive control. The author also makes it clear, however, that the much-repeated term of *auftrastaktik*, overused in current U.S. doctrine to describe directive control, is yet to be found anywhere in German doctrine.

Regardless of the terminology, Citino highlights the learning curve of the allies when they embraced operational-level maneuver as the war continued. The Soviets, British, and Americans soon began teaching the *auftrastaktik* crowd their own lessons in regard to maneuver on the battlefield. Heralded by the author as "the new American way of war," Citino highlights this learning demonstrated in Operation Cobra as "something new for the U.S. Army, a conceptual breakthrough from broadfront advance into maneuver-based operational warfare."

While many military professionals are quite familiar with the content of the first part of this book dealing with World War II, it is the rest of the book that is the most groundbreaking and relevant to the type of warfare we face today. Professor Citino provides a thorough analysis as to the role of operational-level warfare in Korea, the Arab-Israeli Wars, the Indo-Pakistani War of 1971, the Iran-Iraq War, and Desert Storm.

In the chapters dealing with Korea and the Arab-Israeli Wars, which appear to be the most profound, Citino clearly demonstrates how there is much to be gained from the study of the past. "In operational terms," writes Citino, "Korea was a very important war, a bridge between the immense conventional battles of World War II, with their clear-cut winning and losing, and the long twilight struggle that the United States had recently decided to undertake as a result of the Truman Doctrine." Professor Citino goes further to declare that the real "proving ground" for operational-level warfare since the end of World War II has been the Middle East, as the Israeli Defense Force has demonstrated the supremacy of operational maneuver time and again during the

Arab-Israeli Wars. Of course, for Israel there is no other choice but to seek a battle of annihilation against the enemy. As Citino states very well for the Israeli army, "Battlefield victory, rapid and decisive with minimal friendly losses, is not simply desirable. It is essential."

It is only toward the end of the book that Professor Citino possibly exposes the proverbial flank within his prose. I am still unsure as to why the author states that Desert Storm ended the existence of the 1st Infantry Division (p. 291) after its performance during the war. In addition, fact begins to blur with opinion (as analysis often allows) as Citino seemingly picks up the ax others have chosen to grind in regard to current U.S. Army transformation efforts.

That being said, there is a great deal of legitimacy in his comments and the truth is often painful. Citino's well-stated insights and historical explanations are certain to provoke both sides within the military establishment with his analysis of what he calls the "post-1991 wrong turn." Using our most recent combat action in Iraq as a counter to the idea of transformation, the author firmly states that, "apparently, there is still a great deal of utility in massed formations of heavy M1 tanks," as he reminds us all that this may not be the last campaign of this nature in our current war on terrorism.

Blitzkrieg to Desert Storm is an excellent book and should be read and digested by every professional soldier. Works of this nature represent the "book" referred to by the late von Schlieffen, and it is imperative that we all continue to increase our knowledge of the art and science of war.

JIM DUNIVAN
MAJ, U.S. Army

At the Abyss, An Insider's History of the Cold War by Thomas C. Reed, Ballantine Books, NY, 2004, 384 pp., $25.95 (hardcover)

At the Abyss mixes a personal memoir with a general history of the Cold War and does not fully succeed in either case. It promises much and ultimately disappoints.

Mr. Reed's career was an honorable one, sometimes in positions of influence but not as what one would call an insider. He was an Air Force officer, a defense contractor, Gerald Ford's Secretary of the Air Force, and briefly an advisor to Ronald Reagan. In discussing his career and assignments, he introduces a potentially interesting topic, discusses it briefly, and then drops it. The topics he raises include the conduct of nuclear tests in the 1950s and 1960s, the life cycle of weapons procurements, and development of the World Wide Military Command and Control System (WWMCCS), which he claims to have had a significant role in developing. Another topic of immense interest he mentions, but does not develop, is the institutional and personal factors that effect national security planning for national security.

The book contains the by-now obligatory chapter on Nancy Reagan. Specifically, Reed

tells the story of how he and his colleagues were forced out by Ms. Reagan and her allies in the early 1980s. Of all of the people that appear in this book, none are treated in the same amount of detail as he devotes to the president's wife. There is a bit of a suspicion that part of his motivation to write the book may have been to "set the record straight." He certainly presents his own side against Nancy Reagan, Michael Deaver, Ross Perot, and James Baker.

He does tell us a couple of critical things. First, he makes us aware of the concern on the part of both sides in the Cold War to avoid a nuclear confrontation; he at least introduces us to the organizational and technical aspects of this issue. Also, the Cold War was a true conflict and Reed wants readers to know that there was much sacrifice and personal bravery, as well as courage and good judgment, on the part of many individuals in this period.

This is not a bad book, but it is rambling, unfocused, and disorganized. The writing is not always good; it is clichéd and an editor should have cleaned it up. Cold War junkies may want to read it to pick up some interesting anecdotes but, in all likelihood, they will already have encountered what they find here. The Army officer looking for a good general account of the Cold War should look elsewhere.

ROBERT STACY

Confederate General R. S. Ewell – Robert E. Lee's Hesitant Commander by Paul D. Casdorph, The University Press of Kentucky, Lexington, KY, 2004, 472 pp., $39.95 (hardcover)

Paul Casdorph, a noted historian of the Army of Northern Virginia, writes a very thorough and definitive biography about one of the Confederacy's most contrary commanders. In *Confederate General R. S. Ewell*, the author details the life and exploits of the man who is credited by many war veterans and historians with losing the Battle of Gettysburg, where many believe that his corps might have gained a significant tactical advantage on 1 July 1863.

Following a brief account of Ewell's early life, West Point attendance, and assignment to the cavalry, the book provides a concise and to-the-point account of Ewell's Mexican War exploits, as well as some insight into the use of cavalry during the 1848 march to Mexico City. The author also provides some great reading on cavalry life and low-intensity combat with the Navajo and Apache nations in the west between the Mexican and Civil Wars.

Casdorph makes two very interesting points in his book. First, the majority of brigade- and higher-level commanders who served in the U.S. Army before the Civil War had only commanded companies and troops of between 50 and 100 soldiers — experience at this level could not properly prepare an officer for higher-level command. When asked for his advice on certain military issues during the Civil War, Ewell would often tell fellow officers that he could not provide adequate advice because

his 20 years of experience in the "Old Army" had only taught him how to care for "a troop of 50 soldiers and horses." The second point is that officers who spent so much time fighting low-intensity fights against Native Americans were not properly prepared for the large-scale, high-intensity combat of the Civil War.

Not surprisingly, the text painstakingly contrasts Ewell's exploits as a brigade and division commander when he served under the command of General Stonewall Jackson and his service as a corps commander where he was farther removed from an immediate superior and received less guidance. While serving under a hands-on, aggressive commander such as Jackson, Ewell excelled and earned frequent praise for aggressiveness and tenacity under fire. As a corps commander, Ewell did not have anyone to reinforce his decisions or correct him, if he was wrong. Consequently, at Gettysburg and the Wilderness, numerous officers of all ranks in the Army of Northern Virginia criticized Ewell for a paralytic indecision that left his troops unable to take advantage of enemy weaknesses or maneuver in the face of enemy strength.

Casdorph is a very accomplished writer, previously publishing several books, including, *Lee and Jackson: Confederate Chieftains*, and he writes an extremely enjoyable and easy-to-read text on what otherwise might prove to be a less-than-interesting subject. Drawing on an extensive collection of primary sources, the author's research serves as one of the best features of his book. The publishers have done an exceptional job of placing maps at key points in the text to facilitate the reader's situational awareness of the battles that the author describes. While many biographers have a tendency to become too biased toward, or defensive of, their subjects, Casdorph should be congratulated for not becoming too biased toward his subject, painting an extremely balanced picture of Ewell.

The one drawback to this book is the author's occasional descent into providing a detailed historiography about several incidents in Ewell's life, such as the varying points of view over the exact circumstances of Ewell's second wound. While this may seem interesting to professional historians or super-avid connoisseurs of the Army of Northern Virginia, most readers will not enjoy the excess pages devoted to these types of discussions.

Those preparing for a staff ride to Gettysburg will certainly find the discussions of Ewell's leadership on 1 July 1863 very useful when discussing the actions around Cemetery Hill and how the battle may have hinged on Ewell's decision not to take the high ground. Others, who are interested in reading about the leadership styles of the various commanders of the Civil War, will also find this book very interesting. However, most readers of *ARMOR* will not want to rush out and grab this book. With the exception of the preparation for higher command discussion, this extremely well-written book breaks little new ground in reference to Civil War tactics and history.

DALE MURRAY
CPT, U.S. Army

The First World War by Hew Strachan, Viking, NY, 2004, 368 pp., $27.95 (hardcover)

Ninety years ago, Europe plunged into the First World War and forever changed the course of world history. While Americans have traditionally shown little interest in this conflict, the outcome of the Great War set the conditions for many of the problems that we continue to face today in the Balkans, the Middle East, and elsewhere. In *The First World War*, Hew Strachan offers the finest single volume history of the war that has been published in the past 30 years.

Strachan departs from the conventional interpretation that the great powers blundered into the war and had few tangible national aims for the first two years of the conflict. Far from being a lemming-like leap into disaster, Strachan argues that most of the European powers accepted war in 1914 for rational reasons of national interest. He also correctly maintains that the combatants pursued the war in accordance with set national ideologies and that, "This was a great war because it was fought over big ideas."

One of the great strengths of the work is Strachan's ability to view the war from a global perspective. Unlike previous works that tend to concentrate on the events of the Western Front, Strachan gives equal status to actions in the Pacific, Africa, the Middle East, Italy, the Balkans, and the Eastern Front. He demonstrates how events on "other" fronts influenced the general course of the war and the fighting on the Western Front.

The First World War is a superior history that will appeal to both scholars and general readers. Strachan's prose is lively and engaging without sacrificing accuracy or analysis. This book will be of great interest to any military professional who seeks a deeper understanding of the war and its continuing influence on the modern world. Strachan is presently writing a three-volume history of the Great War (the first volume, *The First World War: To Arms*, was published in 2001) that is sure to be the most comprehensive general history of the war to date.

RICHARD S. FAULKNER
LTC, U.S. Army

Armoured Crusader: The Biography of Major-General Sir Percy 'Hobo' Hobart by Kenneth Macksey, Grub Street, London, 2004, pp. 352, $24.95 (paperback)

This is a reprint of the 1967 biography of Major General Percy Hobart, a British armor warrior during World War II. The new edition has an updated introduction that clarifies an insignificant 1953 difference of opinion between the historian Basil Liddell Hart and Field Marshall Lord Carver. This bit of minutiae contributes not one bit to an understanding of the subject.

While the cover describes Hobart as, "one of the most influential military commanders of

LETTERS

Center Confuses Cavalry with Reconnaissance

Dear *ARMOR*,

In his article, "Gettysburg: Reconnaissance Then and Now," in the May-June 2005 issue of *ARMOR*, Captain Christopher Center makes an interesting attempt at illustrating the timeless value of reconnaissance, but his historic example is too broad and the current focus too narrow. He confuses cavalry (a mounted combat organization) with reconnaissance (only one of several roles and missions), which renders his final paragraphs concerning modern scouts during Operation Iraqi Freedom especially meaningless.

The disconnect is that throughout the article, while reasonably describing the opposing Army commanders' employment of cavalry, Captain Center erroneously assesses everything solely in terms of reconnaissance as though nothing else matters. The role of cavalry was far more complicated and is well worth historical study. At Gettysburg, Union Cavalry was finally massed and employed as a corps directly under the Army commander. It effectively conducted Army missions, especially economy of force (attack, movement to contact, defend battle position, defend sector, and retrograde) as described in U.S. Army Field Manual (FM) 17-95, *Cavalry Operations*.

While the image of a cavalry scout observing the enemy is timeless, the brigade or battalion reconnaissance, surveillance, and target acquisition (RSTA) scout is conceptually and doctrinally more akin to a Civil War *skirmisher* moving in extended order ahead of his regiment or the *picket outpost* in defense. The correct modern analogy for this article would have been the corps' armored cavalry regiment and the divisional armored cavalry squadron.

But don't just trust me on this, read the 1996 version of FM 17-95. Also, the role and employment of cavalry at Gettysburg is very nicely summarized on pages 1-3 and 1-4.

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

Teaching Soldiers Arabic: A Tactical Approach

Dear *ARMOR*,

The program described in "Theater Immersion: First Army Post-mobilization Training," by LTG Honore and COL Daniel Zajac, is truly impressive. The article, which appeared in the May-June 2005 issue, should save soldiers' lives and contribute significantly to brigade combat effectiveness and achievement of their objectives.

I suggest that a natural enhancement to the training would be a part-time or full-time "spoken tactical Arabic" program for noncommissioned and junior officers who have to deal with Iraqis during daily venues, ranging from conferences to cordon and search operations.

This is not to suggest that you prepare soldiers to discuss Mesopotamian history, but provide them with basic Arabic language skills that will enable them to correctly and politely communicate essential questions, such as "What is your name?" or "What is the problem here?" and understand the answer. Each soldier who receives the training could also be issued a commercially available handheld computer translation device which, combined with the training, would double or triple the soldier's ability to communicate in Arabic. It would also provide the foundation for self-study.

I remember in Vietnam, just speaking a little Vietnamese gave a *co van my* (American advisor) real advantages: it told counterparts and other Vietnamese that he cared enough to learn their difficult language; it helped keep interpreters honest; and it was a big assist in emergencies when it was necessary to give basic commands such as "Behind that house to the left." Keep up the good work.

TERENCE J. DALY
LTC, U.S. Army, Retired

ARMOR Author Wins 2004 Distinguished Writing Award

ARMOR congratulates Dr. George Hofmann, winner of the U.S. Army Historical Foundation's 2004 Distinguished Writing Award. His article, "Flawed Lessons Learned: The Role of U.S. Military Attachés in Assessing Armored Warfare during the Spanish Civil War," in the May-June 2004 issue of *ARMOR*, was selected as the winner in the Army Professional Journals Category. Dr. Hofmann was honored at the Army Historical Foundation's Eighth Annual Members' Meeting and Luncheon on 15 June 2005 at Fort Belvoir, Virginia.

Dr. Hofmann, a professor of history at the University of Cincinnati, is a renowned author and a valued contributor to *ARMOR*. We are proud of his accomplishments and share his passion for military history.

REVIEWS continued from previous page

the Second World War," the book does not support the assertion. On the contrary, this book and many others that make any reference at all to Hobart, paint a picture of a very difficult man that poisoned his professional relationships with a one-sided commitment to armored warfare without regard to any other arm.

Hobart honed his craft with tours of duty in India before World War I. During the war, he served in Europe and later what was to become Iraq and Palestine. Operation Iraqi Freedom veterans may find some similarities with Hobart's experiences of nearly 90 years ago. After World War I, Hobart became a major trainer and spokesman for the use of armor. Some of his exploits in the interwar period are reminiscent of Patton, a similarly outspoken tank proponent.

As World War II loomed, Hobart was a division commander of what would later become the "Desert Rats" in Egypt. He was summarily sacked from that job due to personality conflicts arising from his firm belief in armor. Immediately after his relief, he was forcibly re-

tired from service and faced the real possibility of being left out of the war. During his brief retirement, he took on the task of civil defense, wearing the uniform and insignia of a volunteer corporal roaming the streets of his town challenging passersby.

Soon he was brought back into active service where he capably commanded two armored divisions before and after the Normandy invasion. His strength was that of a superb trainer and visionary in the use of armor. However, others that had influence over his future did not appreciate that strength during the time of armor's ascendancy. Hence, the opposition that Hobart experienced throughout much of his time as a general officer.

Upon his ultimate retirement, he became the administrator of a veterans' hospital. In that job, he enjoyed the company of old veterans like himself. After leaving that position, he entered into final retirement and died quietly in 1957.

Armoured Crusader is an interesting book that should hold some interest to today's ar-

mor soldiers, if only to reveal some of the development of British armor. Readers unfamiliar with the British style of writing are cautioned about their tendency to overuse unexplained acronyms and titles. While this cultural habit can be distracting, it is of little importance. Additionally, slightly more than half of the book covers the pre-World War II period. The narrative seems to drag on to such a point that readers may be challenged to stay with the book to the end. Major General Hobart hardly merits a passing mention in many other general histories of World War II. His biography may be of some interest to armor soldiers because of the specific nature of the subject, but it probably won't appeal to those interested in the broader ranges of military history and leadership. History has already designated who among the untold millions of World War II soldiers are to be the subjects of enduring fame. Major General Sir Percy 'Hobo' Hobart is not likely to join that group anytime soon.

JAMES CLIFFORD
CSM, U.S. Army

From the Boresight Line:
Proper 120mm Ammunition Stowage

by Sergeant First Class Everett R. Goodrich and Mark Ryzyi

"Knowledge is power when shared."

In preparation of tank gunnery, crews train on multiple tasks to ensure they are proficient in their job skills, which should guarantee a qualified rating on Tank Table VIII. Throughout the gunnery training phase all tasks are important — individual task training is the key to successful collective tasks.

Collectively, a tank crew wants to acquire, engage, and destroy all targets presented for each engagement. The score for each engagement depends on the time, in seconds, of the last target destruction. To assist in faster engagement times, experienced tank crewmen emphasize the training of loading the 120mm main gun. During the training phase, the loader will be required to load the main gun until he meets crew standards. In most cases, the loader is allowed to stow the HEAT and sabot rounds in the ready rack where he is comfortable. Since the training sabot weighs 37.8 pounds and the training HEAT weighs 51.4 pounds, the majority of loaders prefer to place HEAT rounds in the upper tubes of the compartment — when the locking mechanism is unlatched for the HEAT round, the weight of the round will assist in the removal and loading process. This is where the armor community falls short in safety issues for crews and equipment.

All M1-series tanks have a ready and semi-ready ammunition compartment in the turret rear and a hull ammunition compartment. The main armament ammunition is stowed in the racks behind sliding armor doors. Each compartment, including the hull, has blow-off panels, a reinforced structure, and ballistic doors to protect the crew in case of projectile penetration in the ammunition storage area. The design specification of the 16-, 17-, and 18-round ammunition racks is the deciding factor in storing HEAT ammunition.

The initial M1A1 tank from 1985 was assembled with 17-round racks in the turret ammunition compartment and full anti-fratricide protection for all tube locations on both the ready and semi-ready sides. Also, the hull ammunition compartment has full anti-fratricide protection. Because of their design, HEAT rounds are more vulnerable when compared to kinetic energy or canister rounds. Thus, to lower overall system vulnerability, only kinetic energy and canister rounds are to be stowed in the top two rows of the turret ammunition compartments. The lower two rows can hold either kinetic energy, canister, or HEAT rounds. The anti-fratricide protection is provided by wrapping materials around the outside of each tube where the warhead is located. If the jet steam of a HEAT round was to penetrate the ammo storage area and detonate a HEAT warhead, the anti-fratricide bars are made to stop the fragmentation and explosive effects from detonating a neighboring round.

The design of the M1 tank evolved into the M1A1 to combat the increased capability of threat forces. The M1A1 tank incorporated modifications that increase the weight of the vehicle. During this period of production, our battle secnario was the tank-to-tank battle as were the fears of the Cold War. This type of battle scenario drove the requirement for more kinetic energy rounds rather than chemical energy rounds. To mitigate the increase in vehicle weight, there were several vehicle weight-reduction initiatives, which included reducing anti-fratricide protected locations within the new 16/18-round ammunition racks. Since the Cold War load plan required a majority of kinetic energy rounds, the reduction in anti-fratricide bars was not considered a reduction in capability.

The 16- and 18-round ammunition racks have been used in the Abrams tank since 1990. Whether you have a 16- or 18-round rack will determine where HEAT rounds will be stowed within the turret ammunition compartment. A 16- and 18-round rack has anti-fratricide bars mounted around the rearward portion of the tubes. Refer to Technical Manual (TM) 9-2350-264-10-1, *Operator Controls, PMCS, and Operation Under Usual Conditions*, page 2-485, for the exact placement of rounds. Generally speaking, to maximize tank crew survivability, stowage of HEAT rounds are to be placed in the two bottom rows and in the inner tube locations of the turret ammunition racks. Kinetic energy and canister rounds can be stowed in all rack locations of the turret ammunition compartment. The hull ammunition compartment will accommodate free stowage of kinetic energy, canister, or chemical energy rounds. However, HEAT rounds are considered safer if they are stowed in the inner column of the hull ammunition compartment. If more HEAT rounds are to be uploaded, the TM depicts the tubes that can be used to accommodate your unit's SOP, but these rounds need to be fired first. The new U.S. Army Field Manual (FM) 3-20.12, *Tank Gunnery (Abrams)*, will address the 120mm ammunition stowage.

Other safety considerations when handling and storing 120mm ammunition include: thoroughly inspecting all rounds prior to uploading according to TM 9-2350-264-10-2, *Operations Manual Operation Under Unusual Conditions, Emergency Procedures, Troubleshooting, and Maintenance*, page 5-11, Table 5-2; training rounds will not be stored in the hull ammunition compartment due to the vulnerability of the training round propellant; load only enough training ammunition in the bustle compartments to achieve immediate training objectives; do not have, operate, or carry any unauthorized wireless/electronic devices when within three meters of tank ammunition; never operate any tactical or commercial radio on the 200-280 MHz frequency when within three meters of tank ammunition; frequency blocks shall be incorporated in all radios near the tank ammunition; and wear gloves when handling ammunition — the human body could act as an antenna amplifying any signals in area if the center primer electrode is touched.

One of the ten principles of training in FM 7-0, *Training the Force*, is combat proficiency. The goal of all training is to achieve the standard. Leaders should make training as realistic as possible, within the confines of safety and common sense. Note: during training/tank gunnery tables, reinforce the proper storage of ammunition in the racks. Improper storage of rounds during combat could result in death or equipment failure.

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