

Third Infantry Division (Mechanized) After Action Report
Operation IRAQI FREEDOM

Table of Contents

Chapter 1	Continuous Offensive Operations Over Extended Distances	1
Chapter 2	Full Spectrum Operations	11
Chapter 3	Mechanized Operations in Military Operations on Urban Terrain (MOUT)	21
Chapter 4	Fire Support in Offensive Operations	29
Chapter 5	Helicopter Operations in the Offense	35
Chapter 6	Embedded Media	41
Chapter 7	Reception, Staging, Onward Movement, and Integration (RSOI) and Army Prepositioned Stock (APS)	45
Chapter 8	Force Modernization/Modification Table of Organization and Equipment (MTOE)	51
Chapter 9	Intelligence	63
Chapter 10	Maneuver	83
Chapter 11	Battle Staff Planning	93
Chapter 12	Fire Support	99
Chapter 13	Aviation Operations	131
Chapter 14	Close Air Support (CAS)	137
Chapter 15	Engineer	143
Chapter 16	Air Defense	169
Chapter 17	Communications	183
Chapter 18	Logistics	197

Chapter 19	Personnel Service Support (PSS)	213
Chapter 20	Combat Health Support (CHS)	221
Chapter 21	Equal Opportunity (EO)	231
Chapter 22	Unit Ministry Team (UMT)	235
Chapter 23	Nuclear, Biological, and Chemical (NBC)	239
Chapter 24	Provost Marshal (PM)	251
Chapter 25	Army Airspace Command and Control (A ² C ²)	259
Chapter 26	Command and Control (C ²)	265
Chapter 27	Information Operations (IO)	269
Chapter 28	Civil Affairs (CA)	271
Chapter 29	Marne Visitors Bureau (MVB)	275
Chapter 30	Inspector General (IG)	279
Chapter 31	Staff Judge Advocate (SJA)	281

Chapter 1

Continuous Offensive Operations Over Extended Distances

Chapter Contents

Introduction

Topic A - Training for Combat

Topic B - Command, Control, Communication, Computers, and Intelligence (C⁴I)

Topic C - Task Organization

Topic D - Battlespace Management

Topic E - Logistics

Introduction

Operating considerably beyond existing doctrine, the Third Infantry Division (Mechanized) (3ID [M]) proved that a lethal, flexible, and disciplined mechanized force could conduct continuous offensive operations over extended distances for twenty-one days. At its largest point, the division owned and influenced a 16,100 square kilometer (km) battlespace (230 km deep and 70 km wide). The division's training, utilization of command, control, communications, computer, and intelligence (C⁴I), consideration and implementation of its task organization, adherence to battlespace management, and logistics all provided invaluable lessons for the force. The lessons learned about offensive operations during Operation IRAQI FREEDOM (OIF) will enable the Army to grow and further develop its existing capabilities.

Chapter 1

Continuous Offensive Operations Over Extended Distances

Topic A - Training for Combat

The roots of the division's successful attack to Baghdad are found on the training fields of Fort Stewart, Fort Irwin, and Kuwait. The division crossed the line of departure with a mature and trained group of staff officers, commanders, and soldiers. The ability of the division to stabilize company commanders and field grade officers after conducting multiple CONUS contingency response force (CCRF) and National Training Center (NTC) rotations produced a seasoned fighting force that was trained and ready to fight and win on any battlefield.

A direct correlation can be drawn between the division's training cycle prior to crossing the line of departure and the division's successful attack into Iraq. The division conducted multiple integrated live fire maneuver operations on urban terrain and detailed command and control exercises at the task force through the division level to prepare for combat.

All maneuver battalions conducted externally evaluated force-on-force and live fire training events focused on offensive operations at the company team level through the battalion task force level. Every rifle squad conducted combined arms training focused on entering and clearing a complex trench system and a multiple room structure. These training events focused every maneuver unit in the division on the exact missions soldiers would execute weeks later against the Iraqi Regular Army and Fedayeen death squads.

The division artillery conducted live fire training events prior to crossing the line of departure that massed every firing system in the division at a single point and ensured every firing battery was trained and ready to mass fires anywhere on the modern day battlefield.

The 4th Brigade (BDE) trained both close combat attacks in support of the ground maneuver commander and shaping operations under the brigade commander's control while in Kuwait. This served to not only synchronize the brigade's internal aviation assets, but to also synchronize the division's aviation assets with the ground maneuver forces. The tactics, techniques, and procedures (TTPs) established between 4th BDE and the maneuver brigades facilitated the rapid and safe employment of attack aviation in combat.

The division fought to train under realistic conditions in preparation for combat. The priorities were clear and subordinate leaders executed training that produced a disciplined, lethal, and flexible force capable of accomplishing any tactical task.

The requirement for tough realistic training has not changed in the past 227 years. The division lived under the "train as you fight" motto for the 12 months preceding the war. The training proficiency, lethality, and maturity of the division serve as an example for the Army to follow.

Lessons Learned

- Key leader and soldier stabilization produced a mature fighting force.
 - Combined arms force on force and live fire exercises prepared units of all levels for combat.
 - Command and control training under offensive conditions at task force through division level was essential to the division's success.
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Chapter 1

Continuous Offensive Operations Over Extended Distances

Topic B - Command, Control, Communication, Computers, and Intelligence (C⁴I)

The division succeeded in its tenacious attack over 600 kilometers (km) from Kuwait to Baghdad, through storms of biblical proportion and constant enemy resistance, specifically because of its bold and decisive maneuver and the ability to command and control on the move. Brigade combat team (BCT) and division command posts (CPs)

separated and formed smaller more mobile command posts in preparation for the continuous attack.

An example of these smaller CPs was the division's use of an assault command post (ACP). Doctrinally the ACP is created to provide a jump capability to a tactical command post (TAC). The ACP is a temporary organization that moves forward to allow for continuity in command and control while the remainder of the CP begins to move forward. The 3ID (M) did not follow this doctrine during Operation IRAQI FREEDOM. The division's ACP was a permanent C² node that provided the commanding general the flexibility to freely move on the battlefield with a separate security and communications package. The ACP enabled the Division Commander to gain a different view of the battlefield than the Assistant Division Commander (Maneuver) (ADC[(M)] and command the division from a vantage point of the commander's choice.

BCT and division CPs became more mobile and responsive by adapting the level to which they set up during stops. Most CPs had at least two levels of set-up in order to maximize capabilities for the duration of the halt.

These smaller and more mobile CPs had several enablers that greatly enhanced the command and control of the division including: Force XXI battle command brigade and below – Blue Force tracker (FBCB2 - BFT), wide band tactical satellite (TACSAT), and Iridium phones. Maneuver units enjoyed huge success commanding and controlling on the move; however other battlefield operating systems (BOS) struggled with on-the-move capabilities, mainly centered on communications platforms. All future development in the command and control (C²) arena must be focused on a mobile structure with long haul communications for voice and data.

The Army must recognize the requirement for smaller and mobile CPs for future doctrine. At the division and brigade level, rapid and decisive offensive maneuver over extended distances cannot be executed without the ability to C² from multiple C² nodes on the battlefield, each of which must be capable of executing C² of its subordinate elements while it is on the move. To address this problem the division's modification tables of organization and equipment (MTOE) must be changed to provide additional equipment and personnel to enable divisions and brigades to command and control on the move.

The mobile subscriber equipment (MSE) network is an antiquated system that must be replaced as quickly as possible. As the division's primary MTOE means of communications over extended distances, its components must be stationary in order to function. With such limitations, there is no way that this type of system can provide reliable, responsive communications over the extended distances and at the extreme pace of operations seen during the offensive operations of OIF. As long as any of the subordinate elements is on the move, the echelon exercising C² must use on-the-move communications systems to do so. During the entire period from line of departure (LD) to the 101st relief in place (RIP) at An Najaf (21 March through 29 March) and again from continuation of offensive operations through seizure of the presidential palace in Baghdad (31 March through 7 April), the division had at least one and frequently two or three of its brigade size subordinate elements and most, if not all, of the division's C² nodes completely on the move. The only way the division could exercise C² was by using its on-the-move communication systems. The MSE system is designed primarily to provide services to stationary CPs in a Cold War style battlefield that is in a fixed geographical area around the locations in which stationary MSE equipment is operated. The name mobile subscriber equipment came from the ability to use mobile subscriber radio telephones (MSRTs) within a 15 km radius of the locations in which stationary

switching equipment is operated. This name is now a misnomer as the scale of distances has expanded ten-fold. MSE is no longer viable in support of maneuver on the modern asymmetrical operating environment. A replacement system(s) with newer technology must be demonstrated to be capable of providing voice and data communications over extended distances between C² nodes that are on the move and in the full variety of environments where the next major battle might be fought (desert, jungle, urban, etc.)

FBCB² as a command and control medium was extremely useful and effective. It provided unprecedented situational understanding for all commanders and command posts. It also allowed the BCT to forward graphics, messages, and fragmentary orders (FRAGOs) across distances that FM could not cover. Limitations included the lack of training received on all facets of the system, poor performance of electronic messaging, and a limited number of systems that allowed fielding to company commander and executive officer level in maneuver units only. To correct these shortfalls Blue Force Tracking (BFT) should increase its messaging capabilities and be fielded to every vehicle in the division.

The communications available to all battlefield operating systems (BOS) other than maneuver were insufficient to ensure timely, accurate, and relevant information dissemination across the entire battlefield. As a result digital systems such as All Source Analysis System-Remote Work Station (ASAS-RWS), All Source Analysis System-Light (ASAS-L), Maneuver Control System (MCS), Joint Early Warning System (JWARN), Advanced Field Artillery Tactical Data System (AFATDS), Automated Deep Operations Coordination System (ADOCS), and command and control personal computers (C²PC) were totally dependent on the MSE network. Combat support and combat service support elements cannot conduct their wartime mission without the ability to communicate, pull information from higher, and push information to subordinate units. This operation justifies the need for a deliberate investment in reliable on-the-move voice and data communications to support all assets in the division framework at all levels. The division's rapid and decisive attack over extended distances caused units to quickly outrun their ability to use FM communications. The TACSAT operations and intelligence (O&I) and fires nets were the primary means of communication for these BOS elements between the division level CPs and the brigades/separate battalions. While these nets provided the range necessary to communicate over extended distances, the limited bandwidth (5 kHz) greatly inhibited the division's capabilities. Though not intended to support all BOS elements, FBCB² did provide a redundant means of communication. With the exception of the maneuver BOS, the inability of the division staff to constantly monitor the command net on the move burdened the staff with multiple relays of information. Every BOS must have the capability to monitor the primary division and corps nets.

The Army must procure an on-the-move, long-haul communications system that provides reliable, secure voice and data communications, including access to SIPRNET, for all staff sections. Access to NIPRNET is also a requirement at every command and every staff section within the division.

The use of alternate CPs enabled the division to move 350 miles in three days while simultaneously jumping the four primary CPs. During a key forward passage of lines (FPOL), the engineer brigade's main CP with augmentation from the division main command post (DMAIN) and division rear command post (DREAR) (G3 change of operational procedures (CHOPs) and division transportation officer [DTO]) assumed control of the division's movement. This allowed the DMAIN, division tactical command post (DTAC) and ACP to continue movement towards Baghdad. If the DMAIN or DTAC

CPs remain set while in the attack, the pace of the battle quickly causes that CP to be out of position to command or control the fight. The key to success in using alternate CPs is equipping them with the communication platforms and personnel necessary to accomplish the assigned task. This is not only true for division level CPs - brigade and task force level command and control nodes faced similar challenges.

The establishment of a division intelligence support element (DISE) was critical to providing intelligence support to the DTAC and to brigades operating forward on the battlefield. Contrary to doctrine, the establishment and deployment of a DISE was not a means of prepositioning an intelligence node forward from which to pull from a sanctuary or base. Instead, it was a response to the demand for an intelligence node with stable communications and access to corps, theater, and national intelligence products to support the DTAC and forward brigades who were all on the move almost constantly for over 72 hours. A DISE should be resourced by MTOE and can be tailored to meet the unit's mission-specific needs. Units should be prepared to deploy a DISE with an alternate CP such as the engineer brigade CP or the DIVARTY CP in the event that the DTAC and the DMAIN move simultaneously.

Lessons Learned

- 3ID (M) relied upon smaller more mobile CPs at the BCT and division level to control operations.
 - MSE network cannot support continuous offensive operations.
 - Wideband single channel TACSAT and FBCB² were key enablers in commanding and controlling on the move. The Army must resource redundant capabilities across all BOS at TF level and above.
 - The Army must procure on-the-move, long range, secure voice and data communication systems.
 - A DISE was critical to the division's success and should be resourced by MTOE.
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Chapter 1

Continuous Offensive Operations Over Extended Distances

Topic C - Task Organization

The continuous attack across 600+ kilometers forced the division to fight in multiple directions and with units in contact often up to 200 kilometers apart. A key to this successful attack was the early resourcing of the maneuver elements with requisite forces to shape and destroy the enemy, as well as conduct all the other necessary functions to be successful. By executing a mission focused task organization of engineers, artillery, air defense artillery (ADA), military police (MPs), logistics assets, and others, the division attempted to give the BCTs all of the assets they would need to influence every aspect of their fight. If the division did not task organize all requisite assets to the BCTs prior to crossing the LD, these enablers would inevitably not be positioned to influence the fight when needed.

During the attack, there were many divisional assets that were pushed down to as low as the company level. Task organizing divisional assets prior to LD allowed BCTs to

integrate these assets during the planning, preparation, and execution of the operation. This allowed habitual teams to form at all levels prior to crossing the LD. Conversely, most echelons above division (EAD) assets came under tactical control (TACON) and operational control (OPCON) to the division days prior to the attack, resulting in a less than optimal relationship between elements sharing common battlespace. Common problems between divisional and EAD units were logistical support, communications during movement, and the lack of a common understanding of the tactical plan.

Lessons Learned

- The division's early task organization validated the Army's current doctrine by allowing the brigades to fight as BCTs.
 - Common problems with EAD task organized units were logistics support, communications on the move, and a lack of a common understanding of the tactical plan.
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Chapter 1

Continuous Offensive Operations Over Extended Distances

Topic D - Battlespace Management

Conducting continuous operations over extended distances on today's complex battlefield is not possible without a clear definition of the BCT's and division's battlespace. The division experienced several difficulties gaining a clear definition of its battlespace from higher headquarters during OIF. Establishing clear and concise boundaries is key to managing a battlespace that extended over a massive 16,000 square km.

Delineating boundaries and maneuver commanders operating within the commander's intent ensured success during full spectrum operations in the division. The clear delineation of battlespace allowed adjacent units to engage multiple enemy formations simultaneously in close proximity to one another with direct fires, indirect fires, and close air support (CAS) while division assets shaped the enemy beyond the BCTs' boundaries.

A common understanding of battlespace at all levels prevents multiple headquarters from shaping the same terrain. When operating on a noncontiguous battlefield the possibility for fratricide is elevated when the ground commander does not have complete control over all fires in his battlespace.

The fire support coordination line (FSCL) and forward boundaries are excellent control measures that are optimally based on the advance of the ground maneuver unit during rapid offensive operations. This allows internal intelligence, surveillance, reconnaissance (ISR) assets to acquire the enemy and conduct shaping operations against them prior to engagement by main body forces. During OIF, attack aviation, air interdiction (AI), CAS, and rocket fires conducted shaping operations. The movement of FSCLs and forward boundaries greatly contributed to the successful execution of shaping and decisive operations when moved in conjunction with the FLOT of the division's maneuver.

The size of the division's battlespace, as well as the positioning of the corps engineer work line, placed extreme importance on the prioritization of engineer assets. Timely and accurate orders from all headquarters facilitate a common relevant picture of engineer priorities and task organization.

Lessons Learned

- Conducting continuous operations over extended distances on today's complex battlefield is not possible without a clear definition of the BCTs' and divisions' battlespace. This could not have been accomplished without TACSAT and FBCB2.
 - A common understanding of battlespace at all levels prevents multiple headquarters from shaping the same terrain.
 - The positioning of the corps engineer work line placed extreme importance on the prioritization of limited engineer assets.
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Chapter 1

Continuous Offensive Operations Over Extended Distances

Topic E - Logistics

The continuous pace and extended distances of OIF taxed the division's logistics systems to the maximum extent. In anticipation of the ambitious maneuver and expected austerity of the theater logistics environment, the Division Commander accepted risk in some classes of supply in order to accommodate the burden of independence and ensure the flexibility required to exploit success. The division directed units at all levels – from platoon to division, to carefully plan and in many cases modify the way they would typically operate. Under ordinary conditions, logistical units attempt to maximize productivity by establishing operations to function from the same place for as long as possible. Every day spent displacing the support unit is an opportunity lost to support operations. Expecting rapid and continuous offensive operations for several days, the division would not be able to set up and operate these steady-state logistics nodes. The lowest level units were therefore forced to be self-reliant for longer periods of time. Units maximized load plans, packing combat systems, as well as support equipment, with no less than a five-day supply of food and water and as much petroleum, oil, and lubricant (POL); repair parts; and ammunition as they could possibly carry. Two more days of food and water were carried for the division within the support units, while other items such as redundant repair parts were left in Kuwait to be moved forward in later lifts.

Rapid, extended, and decisive maneuver strained communications systems and challenged logisticians, at all levels, to prioritize loads and anticipate future requirements. Challenges in communications hindered the divisional units from submitting Orange 1 reports to the division materiel management center (DMMC) and forced the division to rely on "emergency resupply." The significance of supply prioritization for transportation cannot be overstated. Moreover, every transportation mode and lift asset must be utilized to maximize distribution. Much effort in this operation was spent fruitlessly pursuing scarce ground transportation when rotary wing aircraft could have been used to a greater extent.

Amazingly, the division enjoyed relatively high equipment combat capable rates throughout the operation. These rates deserve careful scrutiny, however, and are not indicative of either a necessarily healthy equipment fleet or a meticulous maintenance effort during operations. The rates simply illustrate the dedication of soldiers to do whatever is required to protect themselves from the enemy; accomplish their assigned tasks; and communicate straightforward, relevant information between commanders. In this regard, the division adapted a reporting process that accounted for combat capability, nothing more. For several days, units literally sprinted toward Baghdad. Conducting rigorous maintenance simply would not have been possible. Unfortunately, however, when conditions finally permitted maintenance operations, repair parts were not to be had. Most units literally spent 21 days in continuous combat operations without receiving a single repair part. A number of factors such as the inability to transmit data while on the move and lack of transportation assets fed the downward spiral and made it nearly impossible to recover. Logistics data communication was impossible while on the move because logistics data systems are designed with a reliance on the MSE network that cannot operate while on the move. Logistics data communication between BCTs and division support command (DISCOM) rely on the MSE backbone that cannot provide the required data connectivity during continuous on-the-move offensive operations. Shortages of predictably high-demand repair parts and vehicular fluids had the most lasting effect on fleet readiness. Tires for wheeled vehicles and suspension parts for tracks remained scarce in the theater well after the end of the ground offensive. The division was forced to local purchase packaged POL products while still in Kuwait and continued to rely on the local purchase source in the absence of any effective means of obtaining the necessary products through traditional military supply channels.

Given the challenges associated with poor communications, over extended lines of communication, scarce transportation assets, and continuous consumption, the resupply of the division's food, fuel, and ammunition during the period 25-31 March was accomplished with much difficulty. A valuable lesson learned during OIF was that "just in time" logistics does not work during continuous offensive operations. A greater reliance should be placed on targeted push packages during continuous offensive operations, particularly as it relates to Class IX. High priority requisitions had to be called in "off line" to maintenance managers that remained in Kuwait. Once these parts were obtained, their forward movement competed against other classes of supply for scarce transportation assets. As a result, repair parts outside the division's alternate storage location (ASL) did not arrive during the initial 21 days of OIF. Targeted push packages traveling on dedicated transportation would have alleviated this concern.

Perhaps the most notable contribution to the division's success was the aggressive plan for initial fuel re-supply. With the unwavering support of the 24th CSG, the division committed all available fuel hauling assets to the fight. Two full POL truck companies, direct support (DS) supply company trucks, and the division's organic assets were all embedded into the brigade maneuver formations and pushed 170 fuel trucks closer to the FLOT than ever intended by doctrine. Without these assets, the division would have been forced to stop, tethered at no more than the time/distance a truck driving team could make in a single day. Instead the division was able to cover nearly four times that distance in less than two days and still had fuel in the weapon systems to continue operations. This technique served its purpose well and is undeniably the most crucial logistical aspect contributing to the division's success in obtaining and maintaining tactical and operational initiative. The concept met with unending resistance at the corps level however and whether it would gain final approval remained in question into the final hours prior to crossing the LD. Beyond LD, the lack of communication assets and

extended distances, exacerbated by route congestion, contributed to confusion, frustration, and worry when the fuel assets were delayed returning to their parent unit.

Although the division won the pre-combat struggle to gain additional ammunition for its initial maneuver, consumption rates proved much higher than anticipated when almost all units gained and maintained contact immediately upon entering Iraq. Enemy resistance pockets lined the routes, causing the cavalry squadron and lead maneuver elements to expend common ammo (25 mm and 155 mm high explosive [HE]) nearly continuously for 3 days. Although they had intended to travel ammo re-supply with the division, the corps support command (COSCOM) was unable to muster and organize the assets and have them integrated with the division prior to LD. On requesting ammunition re-supply, the division discovered that the reporting and requesting interface was ineffective and, of course, that the ammunition would compete with other division requirements for very critical transportation assets.

Another challenging aspect of logistics during this operation was medical care. As with maintenance support, Level II and Level III medical treatment services require somewhat stationary, support areas and facilities, normally established in conjunction with brigade, division, and corps support areas. During the division's extended movements, the nearest Level II care for a given unit could be as much as 50 km away. The division relied on aerial evacuation whenever possible, but faced communication and coordination difficulties. The division finally resorted to using only the command net communication resources to call for medical evacuation (MEDEVAC). No other method was reliable or responsive.

Lessons Learned

- Rapid, extended, and decisive maneuver limits communication and challenges logisticians at all levels to prioritize loads and anticipate future requirements.
- In order to maintain its pace of attack, the division relied heavily on the augmentation of corps and theater assets to sustain its forward push of Class IIIB.
- Units tended to rely on aerial evacuation whenever possible or face a ground evacuation of up to several hours.

Chapter 2

Full Spectrum Operations

Chapter Contents

Introduction

Topic A - Maneuver

Topic B - Intelligence

Topic C - Fire Support Transition to Stability And Support Operations (SASO)

Topic D - Civil Military Operations

Topic E - Engineers

Introduction

Operation IRAQI FREEDOM (OIF) encompassed operations across the full spectrum of conflict and across various terrain. Third Infantry Division (Mechanized) (3ID [M]) fought an asymmetric enemy in the mid and low intensity arena and transitioned to stability and support operations (SASO) at the conclusion of the attack. The division maintained the initiative and pressed on with aggressive offensive action. The Iraqi military was not able to adapt their tactics and continued to attack the division's strengths. In addition, the division operated on varied terrain throughout the operation including open desert, urban, and restrictive terrain made up of narrow dirt and improved roads.

The success of the division was due to experienced and flexible leaders; superior equipment; and focused, high-resolution training conducted prior to crossing the line of departure (LD). Leaders quickly adapted to the complex environment and modified their schemes of maneuver and tactics, techniques, and procedures (TTPs) accordingly.

The division was able to quickly transition from the attack to SASO upon the seizure of Baghdad. Mature leaders and disciplined soldiers were the key to this transition.

Chapter 2

Full Spectrum Operations

Topic A - Maneuver

Observation Synopsis

OIF was a full spectrum operation conducted against an asymmetric threat. The deep penetration executed by the division, coupled with the unconventional enemy forces, created a nonlinear, noncontiguous battlefield. The diverse threat and terrain required thinking, flexible, and adaptive leaders.

Simultaneous mid intensity (MIC) and low intensity (LIC) Operations

All commanders faced a multifaceted threat. Throughout the operation, units fought conventional Regular Army and Republican Guard forces as well as paramilitary and terrorist threats. Iraqi forces collocated critical assets with protected sites such as schools, hospitals, mosques, and residential areas to avoid coalition targeting. This diverse threat required significant flexibility and agility. The extended battlespace created a nonlinear battlefield. All units of the division were on the "front lines." There was no sanctuary on the battlefield. Virtually every element of the division was engaged at some point in the fight. All movements in the division zone were combat operations and many lessons were learned about movement security and the capabilities of combat support (CS) and combat service support (CSS) units to move around the battlefield. Small paramilitary teams attacked U.S. forces around the built-up areas in an attempt to draw the division into a city fight. Unit check points, assembly areas, command post areas, as well as forward elements faced the constant threat of car bombs, dismounted suicide bombers, and limited rocket propelled grenade (RPG) and small arms attacks by 2-4 man teams. Each threat presented its own set of considerations and TTPs for the commander. All elements in the division had to provide for their own security because the division did not have sufficient maneuver assets to dedicate to force protection of the division main command post (DMAIN), division rear command post (DREAR), or aviation brigade.

3ID (M) encountered the full spectrum of enemy forces throughout offensive operations on a complex battlefield. The threat forces consisted of the 11th Infantry Division (RA), Medina Division (RG), and elements of the Hammurabi Division (RG), Adnan Division (RG), and Nebuchadnezzar Division (RG) as well as paramilitary/terrorist elements operating in the vicinity of the built-up areas. Iraqi divisions employed armor/mechanized forces at the platoon level in offensive operations and at the brigade level in defensive operations. Enemy paramilitary groups typically operated at squad and platoon level and were armed with .50 caliber machine guns and air defense artillery (ADA) guns mounted on civilian trucks, RPGs, AK-47s, and mortars. The tactics used by the paramilitary were mounted and dismounted counterattacks, RPG ambushes, mortar and small arms fire in an attempt to inflict casualties and interdict the lines of communications (LOCs). Units quickly adapted to the diverse terrain and threat, employing modified TTPs that proved effective, such as leading with tanks, setting sites to wide angle view in urban terrain, and securing convoys instead of attempting to secure the entire route. Tanks were effective against most enemy direct fire targets, however, they were overkill in many cases. The armor-piercing fin-stabilized discarding sabot (APFSDS)/high explosive antitank (HEAT) mix was adjusted in the ammo basic load (ABL) at the outset and was continually refined as the target array of trucks, BMPs, bunkers, and buildings became better known. Toward the end of offensive operations, ABLs consisted of about 60% HEAT and 40% APFSDS. The 25mm on the Bradley Fighting Vehicle (BFV) was highly effective against armored personnel carriers (APCs), enemy tanks, and the vehicles employed by the paramilitary forces in open and urban terrain. All static positions employed a combination of conventional defensive techniques and counterterrorism force protection measures.

Leadership, flexibility, lethality, and survivability were the keys to success. Institutional, home station, and in-theater training conducted prior to crossing the LD ensured the division was fully prepared for the complex environment encountered.

Transition to Stability and Support Operations

Upon entry into Baghdad, 3ID (M) was immediately required to start the transition to SASO. The transition occurred while the division was still fighting Republican Guard,

paramilitary, and terrorist cells. This transition required a great deal of flexibility and discipline; the soldiers and the units executed their missions superbly. Soldiers who had violently attacked enemy formations with the world's most lethal systems over the previous three weeks were now called upon to secure neighborhoods and conduct humanitarian assistance operations. As the nature of the operation changed, the need for certain types of units diminished. Field artillery, air defense, and chemical units were assigned nonstandard missions similar to the security tasks given the maneuver units and significantly improved the coverage the division was able to provide. The initial focus in the city was on establishing security for the civilians living and working in the area. Once a reasonable degree of security had been achieved, the focus transitioned through a series of priorities for security of government facilities, utility infrastructure, museums, banks, hospitals, the reestablishment of services and utilities, and in the removal of weapons caches and unexploded ordnance (UXOs). In addition to the rules of engagement (ROE) and TTP shift that occurs, the mental shift required as soldiers move from a killing focus to a stabilizing focus cannot be overstated. Soldiers and leaders rapidly adapted to the varying threat early in the fight and were just as flexible in adapting to the SASO environment. Divisional engineer and CSS elements immediately set to work on humanitarian assistance tasks and made a significant impact with limited capabilities. Units must be ready to rapidly transition to SASO during combat operations. The diplomatic, engineering, civil affairs, non-government organizations (NGOs), and humanitarian assistance plans and resources must be forward-postured for immediate employment.

Lessons Learned

- We must be ready for rapid success. Follow-on SASO plans must be developed in advance and the necessary resources readily available for commitment.
 - Provide the resources to the brigade combat team (BCT) commanders early to allow them to conduct full spectrum operations including SASO.
 - Plan to conduct SASO concurrently with combat operations or immediately after the completion of combat operations.
 - During continuous operations on a nonlinear battlefield, units must expect and prepare to be in contact throughout the depth of their battlespace.
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Chapter 2

Full Spectrum Operations

Topic B - Intelligence

Observation Synopsis

Operation IRAQI FREEDOM validated the threat premise posited in **FM 3.0, Operations**, dated June 2001. It also highlighted the need for flexible and responsive intelligence collection and processing capabilities, as well as several analytical models to answer the division's intelligence requirements during full spectrum operations.

The threat dimension of the operational environment of **FM 3.0, Operations**, describes an adversary that develops war fighting doctrine or tactics, techniques, and procedures

(TTPs) to counter perceived U.S. strengths and exploit perceived vulnerabilities. Although not ultimately successful against the Third Infantry Division (Mechanized), Saddam Hussein demonstrated the intent to do just that. In many of his speeches prior to the start of the war, he indicated that he did not intend to fight the United States in the open desert, tank on tank. Instead, he intended to draw our forces into the cities and win the fight there. He often talked of employing tactics to create massive casualties and erode our will to fight. Throughout the course of OIF, we saw many examples of the Iraqi effort to counter our strengths and exploit our weaknesses. To avoid air strikes and frustrate targeting efforts, the Iraqis dispersed their forces and hid them under palm trees or in urban areas, often parking artillery or armor systems right next to schools or private residences. They also set fire trenches to try to obscure targeting. The Iraqis conducted some nonlinear, simultaneous operations, coercing citizens and recruiting foreigners to conduct ambushes and suicide attacks against coalition forces. Again, these fighters wore civilian clothes and used civilian transportation to complicate friendly targeting.

The Third Infantry Division (Mechanized) fought on a complex battlefield from the time it crossed the berm until it stopped just south of Baghdad. Once the division reached the outskirts of Baghdad, the main effort eventually became SASO. The division's intelligence effort had to transition, with basic intelligence requirements identified and resources prepared to shift. The division has considerable experience in SASO from both Bosnia and Kosovo. Many individuals recalled the intelligence tools used during the division's leadership of Multinational Division (North) and worked to adapt them for SASO in Baghdad. These tools help the intelligence battle operating system (IBOS) identify the intelligence problems, track intelligence requirements, and graphically depict intelligence analysis. "The complexity of the operational environment requires sharing intelligence from the national level to the tactical level and among headquarters at each level." (**FM 3.0, Operations**, p. 11-8) Our doctrine acknowledges the demands on our intelligence system in full spectrum operations. A division must be able to collect against a commander's priority intelligence requirements (PIR) throughout the full spectrum operations, including the intelligence dimension of SASO. As an example, it must be able to quickly integrate additional human intelligence (HUMINT) assets with corresponding demands for linguist support, operational direction, and analytical support.

The division, lacking the range of collectors, processors, and supporting communications systems that would make the intelligence process seamless, is not yet ideally resourced for full spectrum operations. The Third Infantry Division (Mechanized) did receive some newer collection and processing systems such as the PROPHET, PPS-5D, additional Common Ground Station (CGS) and All Source Analysis System – Light (ASAS-L) just prior to the beginning of the war, but it did not receive a dedicated unmanned aerial vehicle (UAV) or some of the other capabilities requested to effectively conduct full spectrum operations.

A division must have UAVs at the division and brigade level. The technology exists and commanders demand it for near-real-time imagery and targeting. The maneuver brigades were able to benefit from the corps' emphasis on division priorities and from the mini-UAV that the special forces employed in their sectors, but the asset was never totally dedicated to division or brigade priorities. A division needs improved organic imagery processors. The division received a Quick Reaction System (QRS), an imagery system, and a team from the National Imagery and Mapping Agency (NIMA) that provided a T1 communications line and access to imagery only hours old and a Global Broadcast System (GBS) that allowed us to watch UAV video from Predator and

Hunter. These imagery processors were invaluable to the division in obtaining current imagery for planning and targeting.

The division also needs tactical signals intelligence (SIGINT) systems that are capable of collecting and jamming threat signals across the spectrum and that are responsive to the division commander's PIR. These systems need to be mobile, hardened, and quickly operational. The signal environment in current and future battlefields runs the gamut from tactical FM radios, to HF radios, to mobile secure cell phones, to fiber optics. The conventional Army, conducting full spectrum operations on a complex battlefield, requires a collection and jamming system that can keep up with the maneuver forces and adapt to any of these signal environments. The division, therefore, needs an organic system no less capable than those available to the special operations and theater intelligence communities. The military intelligence (MI) battalion received the PROPHET system shortly before the division's attack, but it did not receive technical insertions that enabled it to collect on all of the threats of interest to the division or to acquire key threats associated with the division's transition to SASO.

While the MI battalion brought a solid HUMINT capability to the division with the tactical human intelligence teams (THTs) assigned to each of the three direct support companies, it did not have sufficient capability to man an enemy prisoner of war (EPW) cage, to surge collection or conduct general support operations, or to provide experienced and comprehensive analysis and guidance to operational teams. The G2 identified this problem and requested augmentation in the event of war, which the division received shortly before beginning hostilities. Once the main effort became SASO, the MI battalion increased the division's HUMINT collection by parking several of its legacy SIGINT systems and assigning twenty-four Arabic speakers to support THT operations. This increased the number of collection teams from six to fifteen and also provided twenty-four hour coverage of a key EPW holding area.

The conduct of OIF validated the requirement for a G2X, a key aspect of HUMINT operations, as a permanent part of a division G2 staff. The G2X coordinates, deconflicts, and synchronizes all HUMINT and counterintelligence (CI) operations. It is currently a position that is part of joint doctrine and emerging Army doctrine, having proved essential in SASO in Haiti, Bosnia, and Kosovo. About a year ago, the division G2 recognized that in any future conflict, the complex battlefield and potentially rapid transition to SASO as the main effort demanded the division have a G2X early. However at that time, the divisional MI battalion did not have the senior, experienced leadership to provide a G2X. As war in Iraq loomed, the G2 took an officer out of hide to create a G2X. The position proved critical throughout the fight, not just as the division transitioned to SASO. The overall campaign had a number of agencies and special operations forces (SOF) working in the division's area of operations, and the G2X served as a focal point for deconflicting and synchronizing their operations.

There are several other demands on the intelligence BOS that come with a transition to SASO. The G2 and MI battalion commander had anticipated most of them and requested support prior to the conflict. Some resources, such as a sufficient number of linguists, were very late in getting to the fight. Commanders at all levels, THT, civil affairs (CA), and psychological operations (PSYOPs) teams need linguists. The division needs to establish a screening cell to conduct background checks for local hires and provide a force protection function. We cannot resource this from organic assets. The analysis and control element (ACE) typically needs to reorganize its analysis and collection efforts to address the particular functions of a SASO mission. In the case of Baghdad, the details of the city's socioeconomic status and infrastructure (water, power, sewage, cultural centers, mosques) were as important as emerging leaders, remaining

paramilitary threat, and reestablishment of military forces. The 3ID (M) was able to adapt several tools from its previous SASO experiences to this particular operation.

Lessons Learned

- Operation IRAQI FREEDOM validated the doctrine and the threat dimension of the complex battlefield in accordance with **FM 3.0, Operations**.
 - Divisions need organic collection and processing assets capable of responding to all aspects of the complex battlefield, to move seamlessly from combat operations to SASO, and to cover the vulnerable transition stage. Reliance on echelons above division (EAD) asset support does not provide the consistent dedicated focus that commanders expect.
 - Divisions must have UAVs at division and brigade level to provide near-real time imagery and targeting.
 - Divisions need tactical SIGINT systems that are capable of collecting and jamming threat signals across the spectrum and that are responsive to the division commander's PIR.
 - Divisions need to establish the G2X as a modified table of organization and equipment (MTOE) position; the complex battlefield, full spectrum operations, and the likely presence of EAD/echelons above corps (EAC) assets make it essential.
 - It is very difficult to provide tactical analysis via technical means of an enemy that widely disperses formations and employs extensive numbers of paramilitary forces. More HUMINT is required.
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Chapter 2

Full Spectrum Operations

Topic C - Fire Support Transition to Stability and Support Operations (SASO)

Observation Synopsis

As the division moved closer to Baghdad and the need for counterfire diminished, division artillery (DIVARTY) found itself quickly transitioning to SASO. The rapid transition proved challenging for both the DIVARTY and the division as units shifted focus to rebuilding Iraq's infrastructure and stability.

Division tasked DIVARTY to become the Force Protection Headquarters for Baghdad International Airport (BIA). The DIVARTY's task organization included 1-39 FA (MLRS), 1-3 ADA, and 59th CHEM CO(-). DIVARTY immediately identified resources needed and manpower requirements against specified tasks. DIVARTY also began to perform other non-standard field artillery missions such as securing areas identified for sensitive site exploitation (SSE).

Upon transition to SASO, fire support coverage was provided by one firing platoon per direct support (DS) battalion. Counterfire radar coverage was continuously maintained.

Tactical air control parties (TACPs) were stood down and the division maintained one air liaison officer (ALO) and two enlisted terminal attack controller (ETAC) teams at division level.

DIVARTY also identified an overarching need to reorganize their tactical operations center (TOC) to provide the best command and control (C2) possible for the operation. Cells such as the fire coordination element (FCE) and target processing section (TPS) became less needed, while tracking civilians moving on and off post and the number of fire trucks in sector became more important. After making adjustment to TOC manning along with work areas, DIVARTY reached a level to adequately C2 their mission.

Lessons Learned

- Incorporate SASO components in home station training for all units
 - Prior planning for a force protection mission would have aided in the transition.
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Chapter 2

Full Spectrum Operations

Topic D - Civil Military Operations

Observation Synopsis

As combat operations wind down, units must be prepared to transition to SASO. This requires careful planning, target identification, and establishment of security priorities.

SASO involves protecting infrastructure, historic sites, administrative buildings, cultural sites, financial institutions, judicial/legal sites, and religious sites. Protecting these sites must be addressed in the planning process.

The force occupying an area must plan for civil administration including curfew; interim leadership; fire and police protection; utilities; relief priorities; and authority to hire, fire, and appoint civil workers and leaders. Establishing a centralized information-clearing house is vital to restoring the city functions and keeping the civilian population informed.

The civil information plan must get the commander's message out to the civilian population early and often.

3ID (M) did not have a fully developed plan for the transition to SASO and civil military operations in Baghdad prior to entering the city. Units must be prepared for unexpected success and be prepared to transition early to stability operations. In order to accomplish SASO tasks quickly and seamlessly, early and thorough planning is required of staffs at all levels.

Soldiers and leaders did an outstanding job in executing the transition from combat operations to SASO. However, at the battalion level, the systems and resources that proved effective (CA teams, local interpreters, TPT, and THT) could have been allocated more efficiently. The CA teams attached to each battalion initially were a valuable and flexible resource. Based on changing priorities and a shortage of resources, CA teams were detached from the task force and centrally managed. Other

staff sections such as the fire support element filled the void at the task force level. While these substitute elements performed admirably, they lacked the institutional knowledge and subject matter expertise of a dedicated CA team.

Division of the terrain into subordinate unit boundaries allowed the systematic establishment of security and identification of key infrastructure. However, multiple zone and boundary changes complicated the process and forced companies to reestablish a foothold several times. Maintaining the presence of a company in its respective zone allowed that company to better establish a useful relationship and trust with the local populace.

At all levels, anticipate and plan for the transition from combat to SASO. 3ID (M) did not have a dedicated plan to transition quickly from combat operations to SASO. Early identification of the shift in operational environments will result in more detailed planning and more refined and accurate orders and guidance to maneuver companies. At brigade level, task organize CA assets (with interpreters) to battalions and maintain throughout the duration of the operation.

In preparation for SASO, units should continue to train civil-military operations (CMO) as part of their full spectrum operations training. The use of CMO situational training exercises (STX) training lanes incorporating detailed scenarios supports this home station training effort. The division as a whole did not focus on CMO training prior to the beginning of combat operations, instead focusing on mid intensity operations. Given that there are situations that mandate decentralized execution by our soldiers, a requirement exists to train the soldiers on a variety of scenarios.

As the division transitioned to SASO, it did not have sufficient forces or effective rules of engagement (ROE) to control civilian looting and rioting throughout the city. Looting by the local civilians was a significant obstacle to the reestablishment of order in such a heavily populated area. Units were not able to dedicate resources to stop initial looting due to ongoing combat operations. However, once the enemy situation permitted, companies were able to focus on looting and began to detain and process looting civilians as EPWs. The problem quickly diminished to a condition that a local organized "neighborhood watch" could control.

Looting and rioting are one of the many competing priorities that commanders must plan for early in the transition to SASO. Employment of non-lethal munitions should be planned and resourced to allow a graduated response and minimize civilian casualties.

Lessons Learned

- Minimize boundary changes and unit moves to allow units to establish a relationship with the locals in the area.
- Plan for SASO before combat operations begin and be prepared for transition to SASO early.
- Allocate a minimum of one military police (MP) battalion per maneuver division for the initial stages of SASO operations.
- Allocate one CA brigade per maneuver division for the initial stages of SASO operations.
- Train for SASO in conjunction with combat operations training.

- Train and resource maneuver units to counter looting and rioting.
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Chapter 2

Full Spectrum Operations

Topic E - Engineer

Observation Synopsis

As the division transitioned from offensive operations to SASO, several resourcing problems in the engineer functional area became apparent. The most critical was an acute shortage of explosive ordinance detachment (EOD) personnel to clear enemy weapons caches and unexploded ordnance (UXO). In addition, the combat engineers needed for combat operations were not always the best fit for reconstruction.

EOD assets and UXO removal and destruction become particularly important as combat operations cease. 3ID (M) was assigned one EOD company for this operation. Though this company was tasked almost to its maximum capability during offensive operations, it was able to sufficiently accomplish its mission. Once 3ID (M) moved into Baghdad and combat operations began to wind down, it became apparent that one EOD company would not be sufficient to support the division. Countless weapons caches, combined with areas heavily laden with UXO, proved to be a major task for combat engineers. Though not specifically trained in UXO destruction procedures, the division relied heavily on combat engineers in the removal and destruction of UXO and weapons caches.

During the transition from high intensity conflict to SASO, additional EOD teams are required, especially in urban areas. Soldiers were constantly put in situations where local civilians identified UXO and weapons locations. One of the ways to gain the confidence of the populace is to be able to quickly deal with these occurrences. By being immediately responsive, we can gain their confidence and make future operations much easier. A division must have at least one EOD company for combat operations, depending on the division's battlespace and number of populated areas. As hostilities end and units transition to SASO, they must be augmented with at least one additional EOD company per division, if that division is operating in urban areas.

Facilities engineer support and higher-level engineer planners and facilitators must be in place immediately as hostilities begin winding down. Though there was no formally announced cease-fire, the Army and Marine units began the transition to SASO after they occupied Baghdad. Over the course of the war and years of neglect, numerous critical elements of key infrastructure were damaged or destroyed and would have to be rebuilt.

This was immediately apparent when the division seized the city's main airport. This airport had been an objective throughout the entire development of the plan, but no specific plan existed for the occupation of the site. Headquarters from brigade to Coalition Forces Land Component Commander (CFLCC) level sought to set up their command posts (CPs) in buildings, but there was no plan in place to establish the infrastructure to support this.

In addition to being an issue at the airport itself, infrastructure rebuilding was of vital importance in dealing with the local population. In order to gain the confidence and trust of the locals, it was important to demonstrate that we were willing and able to help.

Though they succeeded to a great extent given their capabilities, the combat engineers and combat heavy engineers assigned to the division are not capable of the level of technical work that must be performed.

If the final objective of an operation includes existing buildings and facilities, there needs to be a clear plan for the occupation of the facilities as well as a plan for the re-establishment of the basic infrastructure needs. Technical engineer experts from specialized units such as prime power and facilities teams must be positioned to begin work as soon as possible. Additionally, higher level plans and teams for the rebuilding of civilian infrastructure need to be clearly established, made known to all units involved, and on the ground immediately.

Lessons Learned

- Lack of EOD teams to cover the battlefield during SASO severely limited the ability of division to clear UXOs and consolidate captured enemy ammunition. Allocate a minimum of two EOD companies to a maneuver division for the initial stages of SASO operations.
- Facilities engineer support is critical during SASO and has to be planned for prior to the beginning of combat operations. Teams must be in place immediately upon the transition to SASO.

Chapter 3 Mechanized Operations in Military Operations on Urban Terrain (MOUT)

Chapter Contents

Introduction

Topic A - Maneuver

Topic B - Fire Support

Topic C - Aviation Operations

Topic D - Training

Topic E - Equipment

Introduction

“Adversaries will also seek to shape conditions to their advantage. They will try to change the nature of the conflict or use capabilities that they believe difficult for U.S. forces to counter. They will use complex terrain, urban environments, and force dispersal methods to offset U.S. advantages” **FM 3.0, Operations.**

In an attempt to create disadvantages for attacking U.S. forces, the Iraqis used urban environments extensively throughout their battlespace. Due to the threat of attack by coalition air and U.S. Army attack helicopters, the concept of open desert maneuver with heavy armored forces was practically abandoned as a form of defensive operations by the Iraqi military. To counter this concentration of heavy forces in urban terrain, U.S. forces used heavy mechanized forces to project combat power at decisive points in order to break urban defense structures. Through the introduction of U.S. mechanized forces in urban areas in the form of raids and blocking positions, Iraqi defensive efforts were isolated or neutralized to the point they became combat ineffective. These successes were contributed mostly to the shock effect created by employing heavy firepower at decisive points.

Chapter 3 Mechanized Operations in Military Operations on Urban Terrain (MOUT) Topic A - Maneuver

Observation Synopsis

To avoid detection and targeting by coalition air power as well as Army attack aviation, Iraqi forces sought refuge in urban terrain. Furthermore, to complicate targeting,

command and control (C²) and key weapon systems were positioned next to or in sensitive sites on the restricted target list.

Despite current mechanized doctrine, the military operations conducted in Iraq proved that a mechanized division is very effective when conducting certain tactical tasks in urban terrain. The division proved that during urban operations it has the capability to decisively conduct the following tactical tasks: fix, block, raid, seize, isolate, contain, and clear.

The division successfully blocked avenues of approach in and out of multiple cities during its attack. The tasks of block and isolate were assigned to contain enemy forces, prevent reinforcement, or protect lines of communication. Several raids were also conducted in urban terrain to elicit a response from the enemy; destroy enemy forces; or to determine enemy composition, location, and disposition. The mechanized forces clearly dominated the urban terrain along large avenues of approach and on all objectives, even while facing rocket propelled grenade (RPG) nests and snipers located on roof tops. The task of seize was given to several mechanized units to gain and hold key terrain in zone. The ability of mechanized forces to conduct forced entry into the urban environment and seize key terrain allowed the commander to quickly control critical avenues of approach and lines of communications. The division cleared urban areas within its capability throughout the depth of its battlespace. Mechanized brigades proved capable of clearing large objectives such as the Baghdad International Airport while simultaneously fighting conventional forces beyond the urban area.

This war was won in large measure because the enemy could not achieve effects against our armored fighting vehicles. While many contributing factors, such as air interdiction (AI), close air support (CAS), Army aviation, and artillery helped shape the division battlespace, ultimately any war demands closure with an enemy force within the minimum safe distance of supporting CAS and artillery. U.S. armored combat systems enabled the division to close with and destroy heavily armored and fanatically determined enemy forces with impunity, often within urban terrain. Further, the bold use of armor and mechanized forces striking the heart of the regime's defenses enabled the division to maintain the initiative and capitalize on its rapid success in route to Baghdad. During MOUT, no other ground combat system currently in our arsenal could have delivered similar mission success without accepting enormous casualties.

The nature of this battlefield and any future battlefields that present asymmetric threats, mandates a significant security force for soft skinned vehicles, C² and logistics packages (LOGPAC). To assist with the division's economy of force efforts and preservation of combat power in the brigade combat teams (BCTs), combat service support (CSS) units must be equipped with sufficient firepower and receive training on employing these systems against ambushing forces. To assist with the challenges inherent to operating in an asymmetric environment, significant augmentation in the form of MPs, linguists, and civil affairs (CA) is required. Security of key urban areas and enemy prisoner of war (EPW) operations quickly exhaust the division's limited organic MP company. Similarly the shortage of linguists hindered operations and stability and support operations (SASO) at the company level and below.

The battlefield of the 21st century will revolve around the populated areas of the world. Mechanized forces provide the Army a unique capability to cordon an urban area and conduct a forced entry to seize key terrain or execute a raid under the protection of armored vehicles. The lethality of a mechanized force enables the attacking force to not only destroy the enemy, but also create a shock effect that destroys his will to fight.

Finally, training conditions at our Combat Training Centers (CTCs) and home station training events must force leaders at all levels to face not only a multifaceted enemy, but also multiple types of terrain. Without the introduction of complex terrain and enemy in all training events, we will fall short of preparing units for combat in the 21st century.

Lessons Learned

- Mechanized forces are capable of achieving decisive success while conducting MOUT.
 - Despite current mechanized doctrine, the military operations conducted in Iraq proved that a mechanized division is very effective when conducting certain tactical tasks in urban terrain (block, raid, seize, isolate, fix and clear).
 - The nature of the battlefield, and virtually any future battlefield that present asymmetric threats, mandates a significant security force for our soft skinned vehicles (C² and LOGPAC).
 - Rules of engagement and clearance of fires in urban areas create unique challenges. The Iraqis set up headquarters, artillery, rockets, and mortars beside schools, mosques, hospitals, and housing areas knowing the U.S. forces would not target these areas and risk unacceptable collateral damage.
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Chapter 3

Mechanized Operations in Military Operations on Urban Terrain (MOUT)

Topic B - Fire Support

Observation Synopsis

The division's successful operations in urban terrain was due to the proper use of observers, selection of munitions, and tactics, techniques, and procedures (TTPs) developed or refined to hastily clear and process fires.

Task force (TF) scouts should be built into the observation plan during MOUT. TF scouts equipped with the Long Range Advanced Scout Surveillance System (LRAS³) can now acquire targets at a longer range and with the same accuracy as the Bradley fire support team (FIST). The observation plan becomes essential immediately after seizing an urban objective and prior to the enemy's counterattack. There are only a few avenues of approach in MOUT where an observer can see beyond 1000 meters. Early detection out to 1000 meters is key for deciding whether to engage targets with direct or indirect fires.

Planning fires in urban terrain requires special attention toward munitions choice and terrain analysis. Iraqi forces used road intersections as key terrain for ambushes because they usually provide the best fields of fire and intersecting avenues of approach. They also heavily used parks and other open areas found in urban terrain to emplace antitank (AT) systems and artillery in the direct fire mode. Dual purpose improved conventional munitions (DPICM) and multiple launch rocket system (MLRS)

did not produce duds on the roads themselves, but did produce some on the softer ground just off the roads. High explosive/variable time (HE/VT) and high explosive/time fuse (HE/TI) mixes are the preferred munitions for urban missions.

For all fire support missions, timely clearance of fires is essential. This is especially true for MOUT, given the time and distance enemy targets are detected forward of friendly forces. Iraqi forces habitually sought refuge in areas that would not be struck by coalition forces with munitions because of the desire to minimize collateral damage. Many times they set headquarters, artillery, rockets, and mortars in or beside schools, mosques, hospitals, and housing areas. While the coalition ROE were clear, there were TTPs used to streamline the process and make counterfires more responsive.

Clearance of counterfires and selecting the best method of engagement took longer than expected at the start of combat operations. Establishing a priority for the method of engagement and triggers drastically reduced the time needed to kill enemy artillery systems. The process used by some units, when faced with targeting or counterfire acquisitions sent to the division tactical command post (DTAC), was to first plot both the weapons location and the impact location on the Automated Deep Operations Coordination System (ADOCS). Targets were then checked against the "no strike list" and the five-meter controlled image base (CIB) imagery. If the weapons location was within 500 meters of an item on the "no strike list" or urban area, the impact location was then verified. If it was near U.S. troops, the judge advocate general (JAG) representative in the DTAC was consulted to determine whether or how to service the acquisition. When it was determined that a high potential for collateral damage existed, the target was processed through corps to gain approval to fire. Response options were determined based on availability of assets. The first option was cannons firing high explosive (HE) followed by DPICM with a converged sheaf. Multiple launch rocket systems (MLRS) fires were used next. CAS was used as a last resort. Finally, counterfires officers (CFOs) began clearing missions directly through the BCTs for fires within the BCT's battlespace, thereby, reducing clearance of counterfires by several minutes.

Air Force close air support (CAS) played an important role in urban operations when collateral damage was a concern. Precision weapons were used against targets such as artillery, surface-to-surface missiles (SSMs), and time sensitive targets (TSTs). Some great examples of this occurred in the cities of An Najaf and Karbala. Close air support (CAS) successfully engaged artillery and SSMs inside these cities with little damage to surrounding property and buildings. Both Army Tactical Missile System (ATACMS) and MLRS were attempted in the same fashion but with heavy collateral damage. Precision weapons were also successful in destroying buildings deemed hostile by the ground commander. Delay fusing and precision "bunker busting" munitions allowed the destruction of buildings while those beside it were left standing.

Lessons Learned

- Task force (TF) scouts should be built into the observation plan during MOUT.
- The CFO can clear counterfire missions through the BCT that owns the land and cut DTAC out of the loop to save clearance of fires time.
- Air Force CAS played an important role in urban operations when collateral damage was a concern.

- High explosive/variable time (HE/VT) and high explosive/time fuse (HE/TI) mixes are the preferred munitions for urban missions.
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Chapter 3
Mechanized Operations in Military Operations on Urban Terrain
(MOUT)
Topic C - Aviation Operations

Observation Synopsis

Army aviation proved effective during urban operations by using the cover of darkness, high-speed aircraft movement techniques, and running fire procedures. Additionally, Iraqi forces collocated critical assets with protected sites such as schools, hospitals, mosques, and residential areas to avoid coalition targeting. Throughout Operation IRAQI FREEDOM, air troops equipped with OH-58D Kiowa aircraft conducted operations in built-up areas. On several missions, they encountered heavy small arms and rocket propelled grenade (RPG) fires. Due to the restricted visibility associated with operating in urban terrain, helicopters became vulnerable to small arms, RPGs, and shoulder fired surface to air (SA) weapons. Although several aircraft received damage while conducting combat operations, none were lost due to enemy fire. This was largely due to movement techniques used by the aircrews. Prior to introducing Army aviation assets in built-up areas, a thorough mission analysis must be conducted to identify the risk to aircrews. Based on this analysis, aircrews can modify mission TTPs as required in order to mitigate as much risk as possible. OH-58D aircraft operated at or below 50 feet above ground level (AGL) while maintaining airspeed of at least 60 knots. Scout weapons teams maintained a separation of approximately 200-400 meters between scout and gun. Conducting operations at night will greatly increase aircraft survivability.

Lessons Learned

- Iraqi forces collocated critical assets with protected sites such as schools, hospitals, mosques, and residential areas to avoid coalition targeting.
 - Night operations are preferred during MOUT.
 - Utilize scout weapons teams with approximately 200-400 meter separation between scout and gun.
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Chapter 3
Mechanized Operations in Military Operations on Urban Terrain
(MOUT)
Topic D - Training

Observation Synopsis

U.S. forces fought like they trained. The division conducted integrated multiple live fire maneuver exercises, MOUT exercises, and detailed command and control exercises at task force through division level. All maneuver battalions conducted externally evaluated company through battalion force on force and live fire training events focused on offensive operations. Every rifle squad conducted combined arms training focused on entering and clearing a complex trench system and a multiple room structure. The division artillery (DIVARTY) conducted live fire training events prior to crossing the line of departure that massed every firing system in the division at a single point and ensured every firing battery was trained and ready to mass fires anywhere on the battlefield. As a result of this training, units were able to engage enemy dismounted and truck mounted forces very efficiently using all available organic weapons systems. Many battles found U.S. forces fighting an asymmetrical enemy that used dismounted infantry and trucks mounted with heavy machine guns and air defense artillery (ADA) guns. Iraqi forces used schools, mosques, and hospitals as headquarters, ammo caches, and sniper positions. Brigade combat teams (BCTs) quickly adapted their tactics to the new threat with very good results. In both open and built-up terrain, BCTs were very effective in destroying enemy armored vehicles. The ability to detect and strike Iraqi forces before they were able to engage resulted in strong target effects by U.S. forces against Iraqi targets. In return, U.S. forces took an extremely small number of direct fire hits from Iraqi armored vehicles. The urban terrain took away a lot of our standoff capability but our crews gunner skills proved faster and more accurate than the Iraqi crews. Current training methodology should be sustained with special emphasis placed on asymmetrical threats that the mounted forces may encounter. Additionally, with the success of employment of armor in urban terrain, armor units must review their mission essential task list (METL) to include MOUT. During past training exercises, the focus of MOUT training was on the infantry units, using armor primarily in a follow and support role. However, during much of the urban fighting, tanks were the primary attack forces. The deficiency in urban warfare training for the tank crews was noticeable and forced units to create "on the spot" TTPs. Home station and Combat Training Center (CTC) exercises must include realistic urban scenarios where tanks lead close proximity (less than 200 meters) attacks into built-up areas with the infantry in a follow and support role as well as bridge seizing and clearing operations. Operational success in MOUT or in open terrain could depend on the ability of heavy forces to seize bridges and bridgeheads. This was true for heavy forces in Operation IRAQI FREEDOM. Historically, armor units spend little time training this critical task. Combat Training Centers must provide company or larger units the opportunity to practice seizing large bridges.

Lessons Learned

- Both home station and CTC training should include MOUT for armored forces.
- Combat training centers must provide company or larger units with the opportunity to train seizing large bridges.
- The Army must have a communications package capable of being carried by dismounted infantry and able to communicate with tanks and mechanized vehicles.
- Repetitive company, team, TF, and BCT combined with live fire exercises are essential components of a combat training program.

Chapter 3
Mechanized Operations in Military Operations on Urban Terrain
(MOUT)
Topic E - Equipment

Observation Synopsis

United States Army heavy forces proved extremely effective for conducting MOUT. The M1 Abrams tank led the attacking columns of U.S. forces through urban areas and was successful in producing a strong shock effect against defending forces. M1s and M2s were attacked with small arms, BMP 30mm and 73mm cannons, T72 125mm rounds, numerous ADA systems, and rocket propelled grenades (RPGs) without suffering the catastrophic loss of a single crew member. Only one M2 was catastrophically destroyed by enemy fire. The M2 Bradley Fighting Vehicle (BFV) is also well suited to the urban environment. Its size allows it to be easily maneuvered in built-up areas and the elevation, deflection, and barrel length allow it to engage and suppress vehicles and buildings up close.

Lessons Learned

- Both the M1 Abrams and M2 BFV proved to be extremely survivable and lethal while conducting MOUT.
- The BFV should be updated with a reconfigured bussel rack for protection of ammunition and a Bradley commander (BC) turret machine gun to improve its urban fighting capabilities.

Chapter 4 Fire Support in Offensive Operations

Chapter Contents

Introduction

Topic A - Joint Fires

Topic B - Counterfire

Topic C - Fire Support Planning, Coordination, and Execution

Topic D - Training and Resourcing the Fire Support System

Introduction

The ability of the Third Infantry Division (Mechanized) (3ID (M)) to mass joint fires on the battlefield contributed largely to its success in Operation IRAQI FREEDOM (OIF). From the initial destruction of the observation post (OP)/intelligence, surveillance, and reconnaissance (ISR) mission to the silencing of enemy indirect fire systems and movement to Baghdad, field artillery, close air support (CAS), and air interdiction (AI) proved instrumental in the division's freedom of maneuver. With the successful integration of joint fires, the fires support battlefield operating system (BOS) validated and sustained previous tactics, techniques, and procedures (TTPs). The fire support BOS identified some shortcomings in resourcing the fight, but adapted to ensure timely and accurate fires throughout the division.

Chapter 4 Fire Support in Offensive Operations Topic A - Joint Fires

Observation Synopsis

During OIF, indirect fires played a major role in the support of maneuver operations. Division decentralized and pushed down indirect fire assets to the maneuver brigade and battalion level for timely fires. This was critical, as many engagements happened while on the move and occurred quickly on the battlefield. The destructive power of indirect fires was visible through the use of standard and improved conventional munitions. The search and destroy armor (SADARM) munitions debuted in combat operations and was more lethal than originally thought.

Throughout OIF, air support had a major impact on the battlefield. Air support proved highly successful both in shaping operations as well as in the close fight. The division utilized air support for a number of different missions including shaping, armed recce, counterfire, and CAS. Responsiveness, lethality, and integration into maneuver contributed to the success of CAS on the battlefield.

The concepts of CAS stacks and push CAS provided very quick and effective support. To support the ground commander's scheme of maneuver, air liaison officers (ALOs) positioned CAS stacks to provide quick response. As a result, CAS for troops in contact was available within 10-15 minutes. On rare occasions, poor weather conditions decreased CAS responsiveness.

Precision-guided munitions proved to be a lethal combat multiplier. Joint direct attack munitions (JDAM) repeatedly proved its value as an all weather weapon. JDAM was the weapon of choice for troops in contact and to destroy structures in an urban environment.

The BCTs received a robust enlisted tactical air controller (ETAC) package to augment their fire support capabilities. Positioning ETACs forward made for very responsive clearance of fires and direct positive control of the aircraft.

Lessons Learned

- Integration and relationships between fire support elements and the tactical air control party ensured timely, responsive joint fires.
 - Positioning of CAS stacks enabled effective fires within 5-10 minutes.
 - JDAM is an all weather, multi-role munition.
 - Sustain the robust ETAC packages at battalion and brigade levels.
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Chapter 4

Fire Support in Offensive Operations

Topic B - Counterfire

Observation Synopsis

Due to the rapid offensive operations of the 3ID (M), it was imperative that the fire support community silence enemy artillery systems to allow the division unfettered freedom of maneuver. This task was accomplished with great success. Fire support elements (FSEs) at all levels and the division artillery (DIVARTY) sustained and developed new TTPs that allowed for the rapid engagement of enemy artillery systems. Field artillery rocket and cannon fires dominated the counterfire fight.

Counterfire acquisitions were cleared through the ground maneuver commander's battlespace as the division tactical command post (DTAC) simultaneously cleared airspace. As that was occurring, the counterfire officer confirmed both the origin and impact grid with controlled image based (CIB) imagery provided by the Automated Deep Operations Coordination System (ADOCS). Once cleared, DIVARTY either serviced the target with rockets or forwarded it to direct support (DS) artillery units for execution. Maneuver brigades also sent counterfire missions down to task forces to engage with mortars or ground maneuver assets, if the other attack systems could not provide the

desired effect. The division and brigades utilized CAS aircraft that were already in the area to destroy acquired systems. Utilizing every asset available to effectively, efficiently, and accurately silence the enemy's indirect fire systems was critical to accomplishing the mission. These options worked well and proved the Army's flexibility and ability to fight the enemy.

Although CAS was successful at times, the CAS counterfire effort was considered ineffective. Several factors including CAS responsiveness, search time, and positive identification (PID) problems contributed to CAS ineffectiveness in a counterfire role. Even when CAS was on station in the area of operations, the time it took to talk the pilots' eyes onto the target for PID was substantial.

The Army considers Q-36/Q-37 acquisitions as a PID source for counterfire. However, the current Air Force special instructions (SPINS) does not recognize Q-36/Q-37 acquisitions as a source for PID. Q-36/Q-37 radars produce 10-digit grids that can be used to employ JDAM. For the next conflict, place written guidance in the SPINS specifying Q-36/Q-37 acquisitions as PID.

Through combat operations in OIF, 3ID (M) developed many lessons learned for the counterfire fight.

1. Use artillery first for counterfire missions. Use CAS only for those acquisitions that are either outside the range of artillery or restricted due to chemical defense equipment (CDE) considerations.

2. Utilize all assets available in the counterfire fight.

3. Train on these alternate methods of counterfire as well as the primary means to kill the enemy with the best means available.

4. Look hard at placing more fire finder radar systems in divisions. In the future, battles will be fought and won by smaller, more decentralized units.

Lessons Learned

- Field artillery cannon and rockets were the timeliest response to hostile acquisitions.
- CAS was not effective in the counterfire fight due to time to target and PID.
- Timely clearance of fires is paramount in effective counterfire operations.
- Utilize all assets to provide effective counterfire and to remain flexible.
- Divisions need more target acquisition assets.

Chapter 4

Fire Support in Offensive Operations

Topic C - Fire Support Planning, Coordination, and Execution

Observation Synopsis

Rapid offensive operations executed by the division resulted in changes in how we planned, coordinated, and executed fires. The normal AI planning process based on 24, 48, 72, and 96-hour target refinement, nomination, and submission proved not conducive based on movements of the DTAC and division main command post (DMAIN). Division submitted AI nominations to V Corps utilizing ADOCS Excel spreadsheets. The 3ID (M) fire and effects coordination cell (FECC) liaison officer (LNO) to V Corps submitted AI nominations on behalf of the division while the DMAIN was moving.

One of the biggest hurdles the division faced was the ability to conduct target refinement during a rapid advance. Integration of the division intelligence support element (DISE) into the normal targeting process as the DTAC and DMAIN moved proved invaluable. When the targeting team resumed its normal AI submission process, it was amended to focus on the next 24-hours.

Planning fires in urban terrain is a difficult task. Targeting key intersections, parks, and open areas proved crucial in military operations on urban terrain (MOUT). The enemy also used parks and other open areas in urban terrain to emplace antitank (AT) and artillery systems.

During planning, 3ID (M) attempted to create a permissive firing environment to facilitate responsive fires. Planners raised issues such as fire support coordination measures (FSCMs) and other fire control measures. A constant issue when planning air routes for aviation units was the size, placement, and activation of position area hazards (PAH). Placement of the fire support coordination line (FSCL) facilitated shaping operations for surface-to-surface fires; however, the plan to move the FSCL was determined by the air tasking order (ATO) cycle. Twice during the operation, the lead brigade combat team (BCT) was on the verge of crossing the FSCL. To maintain the permissive nature of the FSCL, we recommend movement based on the scheme of ground maneuver while allowing for shaping operations at all levels. The distance between the forward line of own troops (FLOT) and the FSCL should also leave enough room for shaping operations supporting the ground scheme of maneuver.

The permissive firing environment required measures to safeguard friendly firing positions. Brigades established "no fire areas" (NFAs) and censors zones over friendly artillery and Task Force (TF) mortars every time these assets were emplaced.

Prior to OIF, the combined forces air component commander (CFACC) developed a plan to incorporate pre-established kill boxes. During the operation, this allowed for the rapid placement of aircraft, allowed for quick clearance of AI and gave aircraft a reference point to start hunting. One of the challenges with the fixed kill box concept is that it does not allow for flexibility once friendly forces approach an open kill box. The division's desire to attack targets on the high payoff target list (HPTL) or high value targets (HVT) was nullified. Conflicts arose when the Air Force destroyed targets as they were acquired instead of what the maneuver commander wanted destroyed. Recommend the lowest level possible control in opening and closing kill boxes.

Once OIF commenced, 3ID (M) fire supporters cleared fires inside and outside of the division boundary with coalition and special operation forces (SOF). Frequently, the mobile subscriber equipment (MSE) backbone or tactical satellite (TACSAT) radio were the only assets available to clear artillery and CAS. This proved to be quite challenging

while on the move. Clearance of fires within the Marine expeditionary forces (MEFs) and the 101st Airborne areas of operation were handled through the MEF LNO in the DTAC and the 101st LNO at corps by use of the Iridium phone. This made the clearance of cross-boundary fires extremely slow. The Advanced Field Artillery Tactical Data System (AFATDS) was used to clear fires with the MEF when the DTAC had access to the local area network (LAN).

The division encountered many delays when it sent a request to higher to engage a target on the "no strike" list (NSL). The clearance of targets on the NSL must be done rapidly. Delays in approval allow the enemy targets to reposition or seek cover prior to engagement.

During OIF, higher headquarters utilized ISR assets in the 3ID(M) area of operations (AO). ISR assets at all levels can collect enemy targets. However, ground maneuver commanders must clear execution of fires on ISR identified targets.

3ID (M) developed new and revalidated fire execution techniques. A successful method of destroying mounted or dug-in infantry troops was by firing high explosive (HE) rounds with sectioned fuse settings. Although collateral damage was a concern, white phosphorous (WP) was a valuable asset for destroying equipment in tree lines, due to its ability to burn. Dual purpose improved conventional munitions (DPICM)/multiple launch rocket system (MLRS) did not produce duds on the roads themselves, but duds were visible on the softer ground just off the roads. High explosive/variable fuse (HE/VT) and high explosive/time fuse (HE/TI) mixes are the preferred munitions for urban missions. Consider increasing the amount of HE projectiles and time fuse/variable fuse (TI/VT) fuses in the unit basic load (UBL) for urban conflicts.

Lessons Learned

- The fire planning process is continual, even during rapid offensive operations and when communications are not up to task.
- Adhere to the doctrinal application of FSCMs and other restrictive fire control measures to ensure a permissive but safe environment for friendly forces and to facilitate clearance of fires.
- Fire support coordination and clearance of fires is the responsibility of the ground maneuver commander.
- Higher headquarters must coordinate placement of assets under its control with the maneuver commander that owns the ground.
- Proper selection of ammunition types enables the artillery to kill the enemy during rapid offensive operations.

Chapter 4

Fire Support in Offensive Operations

Topic D - Training and Resourcing the Fire Support System

Observation Synopsis

3ID (M) artillery deployed to theater with its habitual modified table of organization and equipment (MTOE) artillery assets and received one field artillery brigade (minus) with the tactical mission of general support reinforcing (GSR) and eventually reinforcing (®). The GSR brigade had only one multiple launch rocket system (MLRS) battalion and no cannon battalion. V Corps requirements for time sensitive targets and Army Tactical Missile System (ATACMS) firing capability limited the use of the GSR asset. The lack of reinforcing assets, coupled with the noncontiguous nature and depth of the battlefield, caused 3ID (M) to assume risk by leaving a brigade combat team (BCT) without a direct support battalion. The lack of an additional 155mm Paladin battalion limited the ability to weight the main effort with cannon fires. The ROE led maneuver commanders to opt for 155mm HE as the munition of choice. This limited the commanders' options, as MLRS was the only available reinforcing unit to provide fires.

Bradley fire support teams (BFISTS) and combat observation and laser teams (COLTS) did an excellent job at locating targets and reporting battlefield intelligence. Observers clearly identified a need for optics with increased range during the war. Presently the optics and imagery devices used by fire supporters is only accurate out to the maximum effective range of direct fire weapons.

BFISTS and COLTS must be proficient in employing all means of fire support. Given the amount of air power available for OIF, we identified positive indirect (type II CAS) and ETACS as a critical training requirement before hostilities. In future operations the lack of qualified ETACS may require our FIST and COLT teams to become universal observers.

FSEs at brigade and higher validated ADOCS as a reliable, efficient, and useful system in the fire support community. ADOCS quickly passed targetable data and provided a clearer "fires" picture to the maneuver commander.

To enhance our counterfire capabilities, the test program set (TPS) MTOE and command and control (C²) needs to be redesigned. New doctrine and capabilities allow fewer fighting forces to travel faster and fight over longer distances. While these capabilities initially allowed 3ID (M) DIVARTY to fight without a reinforcing field artillery brigade, it required different and more robust configurations in C² that are not supported by MTOE equipment or personnel.

Lessons Learned

- 3ID (M) needs additional field artillery assets when conducting rapid offensive operations. This should include at a minimum one cannon battalion, one rocket battalion, and a target acquisition detachment (TAD).
- To optimize the stand off capabilities of fire support optical, lasing, and thermal imagery devices for the BFISTS and COLTS need improvements.
- ADOCS has proven its worth and must continue to play a role in planning and coordination of fire support.
- Increase manning and equipment and restructure command and control within the TPS to provide a more a more responsive counterfire effort.

Chapter 5 Helicopter Operations in the Offense

Chapter Contents

Introduction

Topic A - Incorporate Close Attack Operations

Topic B - Shaping Operations in the Heavy Division

Topic C - Command and Control of Medical Evacuation (MEDEVAC) Assets

Topic D - 4th Brigade as the Command and Control (C²) Headquarters for Security Operations

Topic E - Operations in Urban/Built-Up Areas

Introduction

During Operation IRAQI FREEDOM (OIF), Army helicopters were an integral part of the combined arms team. They supported the division scheme of maneuver with a wide range of capabilities. Medical evacuation (MEDEVAC) aircraft flew over 160 missions into contested terrain, proving itself a combat multiplier. Attack aviation successfully conducted observation post (OP)/intelligence, surveillance, and reconnaissance (ISR) destruction with division artillery (DIVARTY), close combat attacks (CCA), shaping operations, reconnaissance, and many other roles. The 4th Brigade relied heavily on the general support aviation battalion (GSAB) for both sustainment of aviation assets and personnel recovery. The air cavalry had tremendous success working with ground cavalry and close air support (CAS) from the Air Force. During OIF, the aviation community learned many valuable lessons about the use of aviation in a heavy division.

Chapter 5 Helicopter Operations in the Offense Topic A - Incorporate Close Attack Operations

Observation Synopsis

The integration of close attacks in support of division operations was extremely successful. The benefits of attack helicopters in the close fight for the heavy division were proven during operations in support of 3rd Brigade Combat Team (3rd BCT) at An Nasariyah and during reconnaissance operations north of Baghdad. At An Nasariyah, attack helicopters shaped the BCT's battlespace and provided close combat attack support for operations on the objectives. The 3rd BCT incorporated triggers and fire support coordination measures (FSCMs) to allow for attack aviation to shape targets outside the effective range of direct support (DS) fires and transition to support actions on the objectives by securing flanks and providing over watch of ground forces. During operations in support of 1st BCT, attack helicopter battalions conducted shaping operations and close attack operations to enable the brigade to rapidly move through

the Karbala Gap and seize follow-on objectives. The attack helicopter battalions destroyed threats in the restricted terrain that could place direct and indirect fires on 1st BCT and provided intelligence on the route and threats beyond the objective that supported the destruction of the 14th Brigade of the Iraqi Medina Division. Close attack operations are the ideal method of employment of attack aviation in support of the heavy division. The emphasis on close attack operations and the requisite skill sets to execute close combat attacks needs to be maintained by the division through continued training in conjunction with brigade force on force and gunnery exercises. Additionally, the 4th Brigade's standing operating procedures (SOP) must be incorporated into the division field standing operating procedures (FSOP) to ensure standardization across the three ground maneuver brigades.

Lessons Learned

- Close combat attack is the ideal method of employment of attack aviation in support of the heavy division.
 - Continue to work with Directorate of Combat Development (DCD), United States Aviation Center (USAAVNC) to expand the attack helicopter doctrine to reflect the requirements to conduct close attack operations, and integrate attack helicopters into BCT training as a matter of routine.
 - Recommend revision of doctrine through the USAAVNC DCD to transition the White Paper into doctrine in **FM 1-112, *Attack Helicopter Operations*, 02 April 1997** and **FM 1-140, *Helicopter Gunnery*, 29 Mar 1996**.
 - Readdress the need to include the close combat attack maneuver skills inside the helicopter gunnery tables, and allocate the necessary training ammunition to support this task set.
 - Disseminate tactics, techniques, and procedures (TTPs) and doctrinal changes to solicit the best methodologies for the employment of attack helicopters in support of the close fight.
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Chapter 5

Helicopter Operations in the Offense

Topic B - Shaping Operations in the Heavy Division

Observation Synopsis

The current attack helicopter doctrine is still oriented on deep attack operations and although this is still a realistic mission set for the corps attack regiment, it is not the best use for the division attack helicopter battalion. The heavy division attack helicopter battalion is best employed in conducting shaping operations between the division coordinated fire line (CFL) and the division forward boundary (DFB), as well as conducting close attack operations in support of the brigade combat teams. The geographic area that defines heavy division shaping operations is that terrain between the CFL and the DFB where, based on the availability of fires and CAS, the area may serve as a fires sanctuary for an enemy force not yet in contact. Based on procedural fires dead space, enemy forces may not be serviced by either the corps or division fires nodes. The heavy division attack aviation is the ideal platform to deny the enemy the

sanctuary that may be created. The employment of attack aviation in this area facilitates the destruction of forces prior to entering the main battle area (MBA) or assists in maintaining operational tempo during offensive operations to destroy forces that can influence the attack axis with direct or indirect fires.

Lessons Learned

- The heavy division attack helicopter battalion is best employed in conducting shaping operations between the CFL and the DFB and in conducting close attack operations in support of the brigade combat teams.
 - Recommend readdressing attack aviation doctrine to discuss the employment of the attack helicopter battalion in the heavy division to support shaping operations as opposed to deep attack operations.
 - Revise doctrine through the USAAVNC DCD to articulate the definition of shaping operations in the heavy division.
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Chapter 5

Helicopter Operations in the Offense

Topic C - Command and Control of Medical Evacuation (MEDEVAC) Assets

Observation Synopsis

Prior to deployment, the 4th Brigade worked with the division support command (DISCOM) commander and the division medical operations center (DMOC) on the best command and control (C²) and sustainment relationship for medical companies (air ambulance) during combat operations. The issues addressed focused on situational understanding, maintenance, sustainment, and aviation planning staffing at the forward support battalion (FSB) and BCT level. The recommendation that was approved by the division was the centralized C² and sustainment of these aircraft under the 4th Brigade with decentralized execution in support of the BCTs. This relationship was especially critical because the primary means of evacuation to higher echelons of care was by air assets. This relationship worked extremely well and provided responsive evacuation of over 400 U.S. and Iraqi casualties.

The brigade was able to provide all necessary maintenance; forward, arming, and refueling point (FARP) support; Army airspace command and control (A²C²) products; air tasking order (ATO) products; threat updates; routing and, as necessary, armed escort support to ensure the success of each evacuation. This support would not have been possible if these assets were placed under the control of the BCTs. On the two occasions these platforms were placed under the control of the BCT, aircraft launched without requisite knowledge of the threat and airspace control measures. High volumes of previously identified air defense artillery (ADA) systems engaged two aircraft and one aircraft flew within 300 meters of an active position area assessment (PAA). Neither the FSB, nor the BCT is capable of managing these operations based on their current staffing and often do not have electronic access to the air space tasking and control orders necessary to effect aviation. The C² and maintenance relationship exercised by the division is the preferred method of C² and sustainment and is supported by the 36th

Evacuation Battalion Commander and the 30th MEDCOM Commander as the most preferred method of employment of direct support (DS) air ambulance assets at the division level. The division should continue to place DS air ambulance assets under the C² of the 4th Brigade to best support this low-density high demand asset within the division.

Lesson Learned

- Continue to place DS air ambulance assets under the command and control of the 4th Brigade to best support this low-density high demand asset within the division.
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Chapter 5 Helicopter Operations in the Offense Topic D - 4th Brigade as the Command and Control (C²) Headquarters for Security Operations

Observation Synopsis

The 4th Brigade is staffed and organized with organic assets to perform the task of security operations for the division. This economy of force mission is critical to the success of the division in both offensive and defensive operations. The inherent ability of the brigade to move rapidly and transit the battlespace makes the 4th Brigade the best headquarters to command and control this mission set. Supplemented with fires and engineer assets, the 4th Brigade can perform the host of security operations with the required C² and baseline sustainment.

The habitual air ground relationship with the division cavalry squadron and DIVARTY allow for the execution of this task with little preparation from mission receipt to execution. The doctrine and tactics, techniques, and procedures (TTPs) are incorporated in the 100 series manuals and are outlined in the subordinate units' mission essential task lists (METL). This mission set was employed north of the Karbala Gap with great success, despite the lack of DS fires and a ground maneuver element to resolve the disposition of enemy units left between phase line (PL) Kinston and PL Vermont.

Lesson Learned

- Place security operations under the control of 4th Brigade to take advantage of the brigade's inherent capability and organization to conduct this operation.
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Chapter 5 Helicopter Operations in the Offense Topic E - Operations in Urban/Built-Up Areas

Observation Synopsis

Army aviation proved effective during urban operations by using the cover of darkness, high-speed aircraft movement techniques, and running fire procedures. Additionally, Iraqi forces collocated critical assets with protected sites such as schools, hospitals, mosques, and residential areas to avoid coalition targeting. Throughout Operation IRAQI FREEDOM, air troops equipped with OH-58D Kiowa aircraft conducted operations in built-up areas. On several missions, they encountered heavy small arms and rocket propelled grenade (RPG) fires. Due to the restricted visibility associated with operating in urban terrain, helicopters became vulnerable to small arms, RPGs, and shoulder fired surface to air (SA) weapons. Although several aircraft received damage while conducting combat operations, none were lost due to enemy fire. This was largely due to movement techniques used by the aircrews. Prior to introducing Army aviation assets in built-up areas, a thorough mission analysis must be conducted to identify the risk to aircrews. Based on this analysis, aircrews can modify mission TTPs as required in order to mitigate as much risk as possible. OH-58D aircraft operated at or below 50 feet above ground level while maintaining airspeed of at least 60 knots. Scout weapons teams maintained a separation of approximately 200-400 meters between scout and gun. Conducting operations at night will greatly increase aircraft survivability.

Lessons Learned

- Iraqi forces collocated critical assets with protected sites such as schools, hospitals, mosques, and residential areas to avoid coalition targeting.
- Night operations are preferred during MOUT.
- Utilize scout weapons teams with approximately 200-400 meter separation between scout and gun.

Chapter 6 Embedded Media

Introduction

In the wake of the most recent military/media problems during Operation ENDURING FREEDOM (OEF) in Afghanistan, the Department of Defense decided to implement an ambitious media embed operation with U.S. military forces. The reasons were several, including the desire to have media tell the soldiers' story, but also to have the ability to counter the Iraqi propaganda machine. Prior to deploying in November 2002, the Third Infantry Division (Mechanized) (3ID [M]) agreed to embed 50 news media representatives (NMRs) within the division. The division conducted extensive training exercises during December 02-January-03 where 3ID (M) embedded media in units for 3-4 day periods. Unit leaders and the public affairs section developed extensive tactics, techniques, and procedures (TTPs) to support media in the event media were embedded for war. By the time the war started, the Marine Division crossed the Iraqi border with 97 NMRs from more than 60 media organizations.

Observation Synopsis

Embedding is a doctrinal term defined in FM 46-1 as "...the act of assigning a reporter to a unit as a member of the unit. The reporter eats, sleeps, and moves with the unit. The reporter is authorized open access to all sections of the unit and is not escorted by public affairs personnel. Rather, the unit is the public affairs escort. Reporters file their stories from unit locations and security is accomplished at the source, by establishing with the reporter what can be covered and reported on and what cannot be reported on, or when material can be reported." (p 25).

The military media relationship had been tenuous at best since Operations DESERT SHIELD/DESERT STORM and subsequent low intensity conflicts and stability and support operations (SASO) during the 1990s. Media received information during after-operations press briefings from an official spokesperson and were allowed to interview soldiers who participated in the operation. There was little firsthand information from observations made by media who were allowed to accompany troops during these embeds.

Prior to deploying, the division had never trained with embedded media. Media training primarily dealt with encountering media on the battlefield. If we were going to embed media, then we would have to train as we would fight. The 3 ID (M) embedded media for 3-4 days at a time in December during Second Brigade Combat Team's (2nd BCT's) battalion task forces' live fire exercises (LFXs) that culminated with the BCT's LFX in December 02. Feedback from the media was extremely favorable and the print and broadcast stories reflected that enthusiasm. Commanders and soldiers also started feeling more comfortable with media in their ranks.

After the entire division received a deployment order and units arrived, media were embedded with them as part of their training program. These training exercises also offered media the chance to train as they would fight. We discouraged the transfer of broadcast tapes and news stories on daily runs out of the training area. Instead, we encouraged media to use technology that they would probably take to war to file with their editors and producers. Media were required to stay in the field for the duration of the four-day exercise. These training opportunities helped the division and media

develop tactics, techniques, and procedures (TTPs) that would benefit both organizations.

Chief among the TTPs was how media would be transported. Several vehicles were available and used in training including the Bradley Fighting Vehicle (BFV) in front line units. Sources of power were made available to recharge batteries for still and broadcast cameras. Inverters became a necessity for power from high mobility multipurpose wheeled vehicles (HMMWVs). Clothing packing lists were also evaluated and refined. But the most important TTP was for the media understand the soldier and for the soldier to understand the media.

Due to restrictive Department of Defense (DOD) public affairs guidance, media were not allowed to embed with 3ID (M) units from the United States early in the deployment cycle. This proved a hardship on local and regional media who could not afford the cost of airfare to Kuwait. This restriction also interrupted team building between units and media who covered the deployment from Fort Stewart. The team building would prove essential later when building trust between media and soldiers, a prerequisite for briefing the media on unit plans.

Media were embedded in 3ID (M) units on March 11. The Coalition Press Information Center-Kuwait provided chemical protective equipment to include suits and masks. Public affairs assigned media across the division down to the brigade combat teams and to certain separate battalions including 3-7 Calvary, 3rd Military Police Battalion, and 1st Battalion 3rd Air Defense Artillery Regiment. Commanders had the flexibility to assign media anywhere within their brigades/battalions. Commanders had additional flexibility to move them among units to highlight different operations.

When assigning media to brigades/battalions, every effort was made to distribute media owned by the same corporation evenly within a brigade to ensure greater coverage across the division. As an example, the four newspapers from the Tribune News Corporation: *The Chicago Tribune*, *LA Times*, *Newsday*, and *The Orlando Sentinel* were assigned to the 3rd BCT, 2nd BCT, 4th Brigade, and the 3rd Military Police (MP) Battalion respectively. The three major weekly magazines were each assigned to a different BCT. Every brigade and 3-7 Cavalry had a major network or cable broadcast station assigned. The three major wire services, Associated Press, Reuters, and Agence France Presse (AFP) were assigned to different brigades. AFP wanted greater coverage and asked that their print journalist and photographer be split between units. This decision offered AFP the only photographer assignment with the division's aviation. Cox News, Hearst, and Knight-Ridder news services were treated similarly. On any day during operations, a wide variety of articles about different 3ID (M) units could be found across the various news media.

What the division would tell the media about the plan, if anything, before crossing into Iraq was a big concern. The embed ground rules stated explicitly that media were not authorized access to classified information. However, the idea of embedding requires trust as implied in the doctrinal definition. Two days before the ground war, the 3ID (M) provided the media a broad overview of the plan, including tentative timelines, so that the media would understand the context of what they were observing and avoid filing stories that would tip intentions to the Iraqis. If media were not provided the context, they could report their observations and unknowingly provide the Iraqis sensitive information. Public affairs emphasized the ground rules concerning access to sensitive information and the penalties for knowingly releasing sensitive information prior to the briefing. For the purposes of the definition, sensitive information included any mention that the media was privy to classified plans. As the operation progressed, media were

allowed unprecedented access to plans. We know of no media that violated the trust during the entire operation. After all, they were coming along.

The 3ID (M) advocated media vehicles since units would have to carry media equipment in addition to military equipment and several days' basic load. Media could also bring additional support such as engineers, producers, and sound technicians. Media would be able to bring better transmission equipment; therefore, a better quality of video would be produced for the world to see our great soldiers. No vehicles traveled near the front of formations. The reporter or broadcast cameraman often traveled forward to gather footage, but the vehicle remained in the combat trains. When time allowed during a pause, vehicle and people linked up for broadcast. News media representatives and their vehicles all made it safely through the war. The world saw vivid pictures of disciplined, well-trained U.S. soldiers in action.

The following criteria was established for a broadcast media vehicle:

- 1) Vehicles would be civilian equivalents to military vehicles, primarily HMMWVs and Land Rovers.
- 2) Vehicles would run on diesel fuel compatible with JP8.
- 3) Individual commanders would determine where vehicles were placed in formation.
- 4) Should vehicles break down, we would repair on a non-interference basis. If we could not repair the vehicle, media could abandon it and cross level only necessary equipment into military vehicles.

During the war, the soldiers of the division had the opportunity to review articles written by embedded media, usually through the *Early Bird*. It was evident the program was working to our expectations. Media published and broadcast the great work of 3ID (M) soldiers around the world, accurately and unvarnished. As an example, William Branigan wrote about the family members near An Najaf that were killed when they ran a checkpoint from his own first hand accounts. Media often checked with unit personnel to ensure security before filing. Public affairs know of no instance when commanders required broadcast or print journalists to have news reviewed for security before filing.

Embedded media had a more realistic understanding and were more optimistic in their accounts than media who were reporting from the Pentagon, from Central Command (CENTCOM) in Qatar, or from Coalition Forces Land Component Command (CFLCC) in Kuwait. This was most evident during the extreme sandstorm near An Najaf. The commanding general (CG) had briefed the media before the war that 3ID (M) would consolidate at that point for 48-72 hours to rearm, refit, and refuel. The pause was placed in context when they filed, even with the unexpected heavy fighting nearby. Media outside Iraq immediately began suggesting a "quagmire" and flawed plan. In sum, the embedded media balanced the negative press from reporters outside Iraq.

There were very few instances of media breaking ground rules. At times CFLCC and V Corps told embedded reporters from Fox News and Cable News Network (CNN) to shut down, although they had their unit commander's permission to broadcast. There were only two instances that public affairs is aware of when injuries were announced in the paper before next of kin could be notified: Major Roger Shuck's Bradley was hit by an rocket propelled grenade (RPG) and reported in *The Washington Post* and Major Ron Coffey sustained injuries which were reported in *The Jerusalem Post* and further

reported in the States. There was only one instance when a reporter was asked to hold information until a spouse was notified and the reporter did not. *The Long Island Newsday* reporter filed a story that included a reference to 1st Battalion 3rd Aviation Regiment Commander, Lieutenant Colonel Williams having a hard landing behind enemy lines the first night of the war.

Overall, the ambitious media embed program executed by the 3ID (M) was an unqualified success. Media that became part of the team told first-hand accounts of the 3ID (M) fairly and accurately. Neither mission accomplishment nor the integrity of the media was compromised. The media we surveyed spoke highly of their experience and stated the embed far exceeded their expectations. Soldiers, media, and the American public were the true beneficiaries.

Lessons Learned

- Embedding media should be the first consideration for media accompanying and covering military operations.
- Embedding media is a relationship of trust. Embedding at the earliest opportunity allows for sufficient time to build a trusting relationship.
- Media will follow clearly established ground rules. Some flexibility within the ground rules is appropriate.
- Media require a basic understanding of future operations to put their observations in context. Otherwise, their reports could inadvertently tip adversaries to friendly intentions just by interpreting what they observe.
- Access to leaders and soldiers through embedding provided first-hand accounts and balanced negative press from media not embedded.
- Embedded media will provide an accurate and truthful picture that can counter state run media propaganda.
- “Train as you fight” requires training with embedded media. Combat Training Centers (CTCs) and Battle Command Training Program (BCTP) do not prepare units for embedded media, rather they train for encountering media on the battlefield.
- Allow broadcast media to bring their own transportation when accompanying mechanized or ground assault convoys. They can transport their own equipment and provide better coverage. Establish clear coordination measures for ensuring safety of the vehicle and people.

Chapter 7

Reception, Staging, Onward Movement, and Integration (RSOI)/Army Prepositioned Stocks (APS) Draw

Chapter Contents

Introduction

Topic A - RSOI

Topic B - APS Draw

Introduction

The Third Infantry Division (Mechanized) (3ID [M]) deployed nearly 20,000 personnel and thousands of pieces of equipment in support of Operation IRAQI FREEDOM (OIF). Reception, staging, onward movement, and integration (RSOI) and Army prepositioned stocks (APS) equipment draw comprised the initial stages of contingency operations in theater. During this initial deployment and operations process, the division encountered numerous challenges and obstacles. Issues such as theater responsibility, training/experience, automation, and sufficient equipment severely affected the RSOI/APS timeline and ultimately the initial stages of forward operations. This narrative addresses the key issues and lessons learned from RSOI/APS in support of OIF.

Chapter 7

Reception, Staging, Onward Movement, and Integration (RSOI)/Army Prepositioned Stocks (APS) Draw

Topic A - RSOI

3ID (M) began a main body force flow with two BCTs and the division troops on 1 Jan 03. The last main body flight closed on 30 Jan 03. This force flow consisted of 50 passenger flights and nine cargo flights. Army central command (ARCENT)-Kuwait Directorate of Logistics (DOL)/International Travel Office (ITOs) manning and transportation resources were barely adequate to support a BCT in support of a continental United States contingency response force (CCRF) rotation. Therefore ITO and, later, 377th TSC lacked adequate resources (personnel, transportation, buses, security escorts, and cargo baggage trucks) to meet the volume of 3ID (M) soldiers flowing into Kuwait. 3ID (M) placed an liaison officer (LNO) team at the aerial port of debarkation (APOD) to track inbound flights, schedule buses, segregate soldiers' baggage, and move cargo to multiple destinations to assist in the RSOI process. It also placed an LNO team (resourced by the division support command (DISCOM), division transportation officer (DTO), and 3rd rear operations center (ROC) at the seaport of debarkation (SPOD) (port of Shuiabah) to facilitate the divisions' RSO of equipment off strategic sealift.

In contingency operations, RSOI is a theater-level responsibility. Doctrinally a movements control team (MCT) and a movements control battalion (MCB) locate at the APOD to track and control inbound personnel and cargo. Until these elements arrived

3ID (M) assumed responsibility for tracking flights using the Single Mobility System (SMS) and Global Transportation Network (GTN), greeting 3ID (M) personnel and cargo flights, segregating soldiers and their baggage in accordance with APS equipment draw locations, and coordinating adequate buses to move soldiers from the APOD in an expeditious manner. Movement priorities were established daily by Coalition Forces Land Component Commander (CFLCC) and this degraded the ability of the coordinating units to plan support operations. Priority of support for APOD RSO consistently competed with movement of ammunition, SPOD vessel downloads, other service units, and daily sustainment logistics pushes to the camps. 3ID (M) soldiers were needed at the MCB to maintain visibility of incoming personnel and cargo.

Major subordinate commands need to organize and deploy self-supporting advanced echelon (ADVON) APOD control teams to serve as LNOs to the MCB to monitor unit's flow into theater and onward movement to assembly areas. CFLCC C4 should publish standing operating procedures (SOP) for APOD operations tailored to the theater of operations (TOO).

Lessons Learned

- Reevaluate the importance of having an ADVON APOD control team capable of monitoring the RSOI process
 - Transportation support for onward movement must take into consideration the size of the deploying force and coordinate for additional support prior to units' arrival
 - Coordination for force protection ammunition and other security measures should be resolved by the unit ADVON. This will alleviate DA 581 issues prior to arrival of the main body
 - A port support activity unit should be established to sustain unit RSO operations to include a command and control (C²) element for pre-coordination
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Chapter 7

Reception, Staging, Onward Movement, and Integration (RSOI)/Army Prepositioned Stocks (APS) Draw

Topic B: APS Equipment Draw

Although the ADVON arrived in theater two weeks prior to the first unit, they were not allowed to review the equipment availability list until 12 hours prior to units closing at Camp Doha, Kuwait. The equipment scheduled for draw had several shortcomings and overages that were not reflected in the Automated Battlebook System (ABS), and the 12-hour difference was not enough to correct the discrepancies.

Resources must be on hand to issue the amount of company sets of APS equipment required in a timely manner to facilitate building combat power and for integration of units into a contingency operation. 3ID (M) began flowing into Kuwait at a rate of one cargo and two personnel aircrafts per day for 21 days. Future equipment draws should be executed in one location with the ability for companies to draw company-pure APS unit identification codes (UICs). In addition, the timeline at the draw yard must allow for thorough inspections of draw equipment. Inadequate inspections will lead to combat forces drawing vehicles that have bald tires, Class III leaks, and dry-rotted hoses, and

are missing basic issue Items. Items that require actual operation must have required resources on hand to enable the operators to inspect the equipment. A good example of this is having bulk water on hand to test the M17 SANATOR. Incomplete draw yard grids can also complicate this process. The proper number of vehicles must be in place when units close on the draw yard. If the above mentioned systems are not in place a division's G4 section will be forced to deal with draw yard issues rather than focusing on the pending combat operation. Divisions must be very involved in the APS process, especially for units that do not fall under the scope of a BCT. ADVONs must be allowed to screen available equipment in advance and correct any discrepancies before the main body arrives. Lastly, upon arrival of the main body, authority to remove items from the hand receipt should be delegated, at a minimum, to the battalion-commander level. Other factors complicating setting equipment draw grids include the following:

Manual versus Automated Property Book System: Manually accounting for APS property and the lack of an automated system for tracking maintenance returns delay a division's ability to build combat power.

Lack of transportation for onward movement of APS drawn equipment: Upon completion of the draw process, units must have heavy lift assets and security escorts available for rapid movement to staging areas or base camps. TSCs can designate an MCT dedicated to support onward movement of personnel and equipment from the APOD to the issue yard to its final destination.

Force protection ammunition: Units responsible for RSO should task units to provide force protection security assets until the parent unit can process DA 581s.

Unit basic loads (UBLs) for all classes of supplies: Unit basic loads of Class I, water, Class III(P), Class IV, and Class V (ABL), Class IX (prescribed load list [PLL] and authorized stockage list [ASL]) were insufficient to meet the unit sustainment requirements. The supply system at CP Doha lacked the capability to process, configure, and transport general supplies and repair parts. Though the stocks were available to meet the division's demand for Class I and water, the theater was consistently unable to push the stocks to the division camps for weeks. The theater had consumed contingency stock packaged petroleum, oil, and lubricant (POL) products while supporting rotational presence units and training events in Kuwait, but had not replenished the stocks. Additionally they had not adjusted stockage quantities to support a division, much less a multidivisional force. 3ID (M) units were shorted critical Class III(P) items in the UBL draw and because of the delay in transportation were forced to local purchase. Some items were flown from Europe or Fort Stewart because they were not available on the local market. The theater never made up the shortages in the warehouse; the division had no choice except to continue to local purchase the POL products and handle all requirements in this category of supply as emergency/work around issues. This, of course, consumed manpower and resources unnecessarily. The problem continued to frustrate logisticians and using units because when supplies finally arrived, they were ordinarily bulk—50 gallon drums, rather than usable quantities — quart bottles. Although multiple layers of headquarters had analyzed requirements for Class IV materials, numerous times, none had acquired the materials or arranged for delivery in the theater prior to line of departure (LD). None above the division had planned for issue by combat or mission configured loads. 3ID (M) again took on the burden, moving the supplies that existed in the theater, then breaking them down, sorting, organizing, packaging, and palletizing combat configured loads to support a

number of engineer tasks identified through the division war-gaming sessions. Not even Class V got the planning and coordination emphasis that had been expected considering war was imminent. The division had requested an ammunition basic load (ABL) defined as 1.5 X combat system load. CFLCC had approved the load, stocks were available in the theater, and the ASP personnel had deemed it feasible to support the draw. On executing the draw, however, several different agencies stood in the way of progress. Every attempt to gain the ammunition assets resulted in some agency or another denying requests, short loading trucks, or turning away soldiers. Great confusion resulted as every agency including some within the division had differing definitions of the ABL and differing exceptions to their own rules. The entire situation became utter chaos. After repeated attempts to straighten out the problems and fill the unit shortages, the division ultimately cross-leveled ammunition among units to at least glean relatively fair if not adequate loads among them. The theater very quickly became overwhelmed as other units arrived for RSOI, and they were unable to assist the division, finally cutting off support completely. The division crossed LD short the ammunition it had declared necessary to commit to combat. Class IX proved to be no exception to the rule of UBL inadequacy. Army Materiel Command (AMC) had not requested and Department of the Army (DA) had not released the Class IX ASL stocks (contingency stocks related to APS) This single mistake cost the division upwards of 45 days in defeating the bureaucracy involved in the operational project stock management, and then to receive, inventory, configure, and upload repair parts in the forward support battalion (FSB) maintenance companies.

SPOD: Theaters need to identify and dedicate a unit to serve as the port support authority (PSA) and the support package should include command and control (C2), life support, materials handling equipment (MHE), communications, transportation, and tasking authority for transportation and escort security assets.

Life support and camp development: When units deploy to base camps or staging areas, a central point of contact must be established for life support to expedite the process. Multiple points of contact for various life support issues only further complicates this process of getting support to the soldiers preparing for combat.

Field feeding program: A unitized group ration - A (UGR-A) with supplements must be available to deploying units. There should be a senior food service warrant officer position to assist with the food service program ensuring smooth transitions when organizations enter the region. This position can be used as a cell to register units that have food service sections participating in any operations.

In conclusion, 3ID (M) identified many flaws in the RSOI/APS process. Operation IRAQI FREEDOM forced an in-depth analysis of theater/unit mission, responsibility, availability of automation equipment, asset visibility, maintenance programs, and other functions associated with RSOI and beyond. This operation also emphasizes the need for full involvement and cooperation from units and organizations above division.

Lessons Learned

- The combat equipment battalion's (CEB) lack of asset visibility caused units to draw less than their authorized quantities, causing multiple returns to Camp Doha for

equipment draw. It is critical that CEB can provide accurate information on available APS equipment

- A centralized point of contact for life support within the five camps should have been centralized at C4 level to streamline coordination and monitor quality of life issues
- UBLs of all classes of supply must be scrubbed and physically examined by experts within the unit to assess sufficiency, effectiveness, and preparedness

Chapter 8

Force Modernization/Modification Tables of Organization and Equipment (MTOE)

Chapter Contents

Introduction

Topic A - Communications

Topic B - Lethality

Topic C - Survivability

Topic D - Maintenance/Logistics

Introduction

As proven in Operation IRAQI FREEDOM (OIF), the equipment of the U.S. Army dominated the opposition. We could communicate better, shoot further, survive greater impacts, and move logistics more quickly than the enemy could dream about. Our new systems and older systems both proved to be very valuable. Our trained soldiers operating the best equipment in the world simply out performed the enemy in every aspect of the conflict.

This chapter will discuss systems that worked well and systems that need improvement. Mechanized divisions desperately need an on-the-move, long distance communication system. The M1 and M2 proved to be both lethal and survivable. Combat Service Support (CSS) units must become more survivable. Lastly, haul capacities from division to company level are currently not adequate. These suggestions, along with other comments, will be addressed under four general topics: communications systems, lethality of systems, survivability of systems, and maintenance and logistics issues. While our equipment performed admirably during OIF, we must continue to strive to provide the best equipment possible for America's soldiers.

Chapter 8

Force Modernization/Modification Tables of Organization and Equipment (MTOE)

Topic A - Communications

Observation Synopsis

The Third Infantry Division (Mechanized) (3ID [M]) acquired a number of new command and control (C²) systems in the months prior to combat operations in support of OIF. The success of the division was due in large part to a number of these systems that were able to overcome the constraints of the battlefield or current modified table of organization and equipment (MTOE) communications systems. Success, however, was also the basis for criticism of some of the C² systems that the division traditionally uses.

While most systems performed as expected, some systems did not function as required or were not acquired.

Division C2 Enablers

The single most successful C² system fielded for Operation IRAQI FREEDOM was the Force XXI battle command brigade and below (FBCB²) blue force tracking (BFT) system. It is important to mention that the FBCB² system used during this operation was not fielded to facilitate division command and control, but rather to facilitate tracking of friendly forces at echelons above division. Even so, BFT gave commanders situational understanding that was unprecedented in any other conflict in history. It allowed the division to operate with common graphics on the move at all levels from company/team through division, to send short messages and graphics via email, and to locate and identify every unit on the battlefield that had a BFT system. BFT provided the ability for the operator to communicate beyond line-of-sight. This proved to be essential as many units operated in a battlespace exceeding the range of their traditional FM radio communications and did not have single-channel tactical satellite (TACSAT) radios available. FBCB²/BFT replaced mobile subscriber equipment (MSE) data systems as the division's primary method to pass fragmentary orders (FRAGOS) once continuous offensive operations began. BFT was able to plot the location of other friendly units on a map and provide a ten-digit grid location during operations where traditional situational awareness was challenged, such as conditions of limited visibility or link-up with units outside of normal task organization.

Perhaps the greatest limitation of BFT was its limited distribution. Approximately 150 systems were fielded to 3ID (M), resulting in a lack of distribution in several key areas. DIVARTY, DISCOM, engineers, aviation, the division cavalry, and the military intelligence battalion were not extensively fielded BFT and could have taken advantage of the increased situational awareness on the move and the ability to send quick command and control messages anywhere on the battlefield. The combat service support (CSS) community would have greatly benefitted from having a system that combines the functionality of the movement tracking system that it currently uses with the ability to communicate over long distances. The division signal battalion suggested that FBCB² could be used to track the location of nodes and provide signal units with technical data they need to establish the mobile subscriber equipment (MSE) network over beyond line of sight (LOS) distances.

The consensus from the division was that FBCB² worked phenomenally well. The ability of our Army to digitally communicate without the constraint of terrain and to track our forces at near real time is an awesome ability that we must provide our units in order to remain a step ahead of the threat, regardless of symmetry. The use of satellites as a transmission pathway is an asset that removed virtually any range constraint from communicating. However, BFT was non-secure and had the potential to be monitored and exploited by a more technologically savvy enemy. The fielding of an encrypted system similar to this, that provides near-real-time messaging and situational awareness and an expanded bandwidth for data communications with interoperable C² systems, would be extremely beneficial and should become the standard for division command and control.

The battlefield operating system (BOS)-specific C² systems utilized for both planning and execution of combat operations were largely successful. The systems that were the most beneficial for both planning and executing operations were the Advanced Deep Operations Coordination System (ADOCS), the All Source Analysis System-Light

(ASAS--L) and the Advanced Field Artillery Tactical Data System (AFATDS). ADOCS enabled the rapid dissemination of Army Airspace Command and Control (A²C²) and targeting data for dissemination, deconfliction, and modification of fires. ASAS-L functions provided valuable intelligence BOS connectivity between the division level G2 nodes and the brigade combat team (BCT) level. AFATDS was a very reliable fire support tool that provided situational awareness and enabled efficient planning and execution of fires. Global command and control-Army (GCCS-A) also provided the division with a current, accurate common operational picture (COP), allowing key leaders to command and control the division across multiple battlefields. It provided the division staff a quick reference to unit locations, divisional boundaries, and general situational awareness through uploaded graphics. The GCCS-A and command and control personal computer (C²PC) overall were great systems that required minimal maintenance to keep them running.

Acquisition of Radio Systems

Just as there were some systems that worked in spectacular fashion, some systems did not meet expectations for varying reasons. The fielding of the PRC-150 Radio System illustrates the frustration involved with “just in time” fielding. The division received twenty-nine radios during February and early March 2003 to fulfill a requirement for a division high frequency (HF) command net as a long-range backup to TACSAT. Contractor-led operator training took place over the course of nine days. The division was fully operational on both division and corps nets at the start of combat operations, but began to suffer attrition due to destruction of antennae by enemy fire and coupler shorts. Fortunately, the success of single-channel TACSAT radio as a long-range C² system meant the division did not need to rely on the PRC-150.

There were two glaring inadequacies that may have been resolved as a result of a more rapid acquisition process. One of these was the unresolved requirement for a communications system for dismounted infantry at the squad level. The division has currently fielded three different tactical radio systems that can function effectively at a dismounted infantry squad level. The MTOE, however, for dismounted infantry squads and scouts does not include sufficient numbers or types of radios necessary to maximize C² for squad leaders, team leaders, and individual soldiers in any environment. The second unfulfilled radio requirement is the division-wide need for more single-channel TACSAT radios which operate on wide band. Single-channel TACSAT was the primary conduit of division command and control in conjunction with BFT.

Future Division Communications

The success of beyond line of sight (LOS) communications systems and electronic enablers in supporting command and control of units during OIF has set a new standard for the division. In the future, the division must rely more heavily on long-range communications to provide voice and data connectivity throughout the division. While the commanding general was able to command and control the division relying solely on long-range communications, BCT commanders had fewer long-range assets available. Our conduct of offensive operations illustrated the need for more robust beyond-LOS communications not only at division level, but also BCT and even down to the battalion level.

The constant tempo at which we conduct our operations requires us to be prepared to communicate via both voice and data on the move. Communications systems supporting C² on the move must be built into the vehicles used by the leaders that need

them. They must provide high-quality voice and data connectivity between all command posts over which the C² is exercised. It is also important to recognize the difference between the communications support requirements of “C² on the move” and those of a division conducting C² “at the halt” in support of consolidation and reorganization, refit, or stability and support operations (SASO). The increased information requirements associated with these types of periods imply a requirement for increased capability of the system or systems supporting them, such as bandwidth requirements.

The idea of a common operational picture has advanced significantly with the advent of GCCS-A, FBCB², and C²PC, but several of the Army Battle Command System (ABCS) that should be interoperable proved not to be or to be too cumbersome. Each BOS has an information system to suit its particular requirements, and while some of these systems do communicate with one another, there was not enough commonality between user functions, graphical displays, and optional features, even to the level of computer operating system. The future requirement for these systems is a one-stop compatible hardware and software package to synchronize all of the BOS within the unit.

The MSE network has continued to provide the division with voice, SIPRNET, and NIPRNET connectivity, successfully overcoming the constraints of distance and terrain through the establishment of tactics, techniques, and procedures (TTPs). However, the division’s frequent, rapid movements prevented the MSE network from attaining any real usefulness until units halted. In order to satisfy the requirement for a system that is more responsive to the dynamic, asymmetric warfare that we will probably fight in the future, the next generation replacement for the MSE system must be made smaller, farther reaching, and more survivable. The division became dependent on range extension assets to provide connectivity to units that moved and fought greater distances than in previous conflicts. Such capability needs to be distributed down to battalion level.

Communications MTOE Requirements

Two future communications MTOE requirements arise as a result of operations in Iraq. The first is FM radio assets. All vehicles need radios in order to provide command and control for convoys, for combat service support, and for independent operations. Dismounted infantry present another requirement that can be satisfied by either fielding hand-held radio systems or by acquiring additional SINCGARS radios in order to support military operations on urban terrain (MOUT), SASO, and C² between infantry slices and armor units. Combat engineer squads also require FM radios to support their dismounted operations and long-range FM communications requirements not addressed in the MTOE. In addition to combat arms, the CSS assets across the battlefield require increased density. The ability to command and control key logistical assets while on the move in convoy was vital to the success of our operations in Iraq.

The second communications MTOE requirement is for armored vehicles in unit communications sections and signal units in order to increase their survivability. The division signal battalion is authorized crew-served weapons, but it requires armored high mobility multipurpose wheeled vehicles (HMMWVs) and ring mounts to provide their units with adequate force protection. Additionally, brigade and battalion FM retransmission teams would greatly benefit from the added force protection that an armored HMMWV would provide.

In conclusion, the division was able to talk over multiple forms of communication to successfully command and control subordinate units during Operation IRAQI

FREEDOM. 3ID (M)'s success was due in no small part to the division's force modernization efforts, but ultimately our actions served as a basis for future force modernization requirements that will provide the division with an added edge against any threat.

Lessons Learned

- Real-time situational understanding is a key combat multiplier. The ability to track locations of vehicles in your unit and other units is a powerful enabler that can keep commanders informed and prevent fratricide.
 - The division relied heavily on single-channel TACSAT radios and will continue to rely heavily on long-range communications, whether satellite-based or otherwise, in future operations. Any future communications equipment must operate on wide band.
 - The division's future communications requirement for rapid maneuver will involve a system that can communicate beyond line-of-sight, on the move, provide situational awareness, and enable real-time messaging. This should be fielded across all BOS.
 - The mechanism for receiving approval for purchase of critical communications systems must be streamlined to enable units to quickly receive and integrate systems into their arsenal.
 - MSE has limited capabilities in continuous, high tempo, offensive operations.
 - BFT and wideband communications proved to be extremely valuable during combat operations.
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Chapter 8 Force Modernization/Modification Tables of Organization and Equipment (MTOE) Topic B - Lethality

Observation Synopsis

The dynamics of this conflict and the associated low number of American casualties clearly demonstrate the effectiveness and lethality of the heavy armored systems, especially when coupled with new technologies such as the Long Range Advanced Scout Surveillance System (LRAS³), the Javelin, and the new generation of tank killing field artillery rounds known as seek and destroy armor (SADARM).

Some of this equipment was fielded to the division only days before crossing the border into Iraq. Often with less training time than desired, 3ID (M) soldiers employed these weapon systems and destroyed the enemy.

The LRAS³ is a huge combat multiplier that immediately impacted mission success in a multitude of roles. Scouts and brigade reconnaissance troops (BRT) effectively performed their reconnaissance and surveillance (R&S) mission without closing within observation, detection, or targeting range of enemy weapons systems. As a fire support sensor, the long range standoff with 10 digit collection and targeting accuracy provided first round direct fire accuracy. If the LRAS³ could be enhanced to be used on the

move, it would truly be a phenomenal system. The only negative issue with the LRAS3 was that there were not enough to go around. A recommendation is that every section in a BRT, battalion scout, and combat observation and lasing team (COLT) has an LRAS³. Bradley fire support team (BFIST) vehicles and M3s in the division cavalry squadron could employ an LRAS³ type system that could be mounted on their track vehicles. The LRAS³ is a great system the Army must continue to field to units.

The Javelin missile was an invaluable weapon in defeating enemy armored forces and reinforced positions to include bunkers, building, and revetments. There is no other weapon that can support dismounted infantry in fighting against these types of engagements. The command launch unit (CLU) provided day and night capability with the Javelin missile as well as provided vehicles without LRAS³ and dismounted infantrymen with a means of thermal observation out to four kilometers. Javelins must be issued to BRTs and infantry, in addition to engineer and battalion scouts.

The SADARM exceeded expectations and became the preferred precision munitions for field artillery (FA) battalions and their supported maneuver commanders. Out of 121 SADARM rounds fired, 48 pieces of enemy equipment were destroyed. Units also found they could fire substantially less than the doctrinal 24 rounds to achieve effects on target. Because of the success of SADARM, unit tactics, techniques, and procedures (TTPs) were four rounds in effect against a point target. The SADARM truly added a quick-kill ability to the artillery of the 3ID (M).

During OIF, the 3ID (M) proved to be a lethal machine, however, there are some areas of focus that could improve the division's lethality. Of all suggested changes, the need for night vision goggles (NVGs) for every soldier stands out as the most important. Before crossing the line of departure (LD), units found it difficult to ensure that every driver and track commander (TC) had a set of NVGs. Combat support (CS) and CSS units were not the only units that were not well equipped with NVGs by MTOE. Currently, the BRTs are only authorized twelve PEQ-2As and thirty-six M68 close combat optics. These two systems together are invaluable and give our soldiers a decisive edge over any opponent. The BRTs need forty-eight of both the PEQ-2A and the M68. It is also important that the Army replaces all existing PVS7As with PVS7Ds or PVS14s and issue them to every soldier that has a weapon. Anyone who receives a weapon must also have the ability to fire at night. OIF taught us that CS and CSS units must be able to protect themselves at night if they are to move up and influence the fight. Another seemingly small but important issue is that all .50 cal and M240 machine guns must have a set of M22 binoculars as a part of the system. Tracer burnout for both of these systems is further than a gunner can identify and classify a target. Sufficient numbers of binoculars must be issued with these weapon systems to maximize their capabilities.

For greater lethality in the MOUT environment, adjustments can be made to equipment to ensure greater success. M1s need flex mounts for the tank commander's (TC's) .50 caliber machine gun. This will allow for more responsive fires on the enemy. Considering the wide range of missions performed in OIF, the BRT should be equipped with shotguns for quick building entry and with supplemental mounts that allow the M240 to be mounted simultaneously with the M2 or MK19. The M2 and MK19 are great weapons for open terrain, but the M240 is the weapon of choice for urban or restricted terrain.

To add more lethality to the BFIST (M7), the ground vehicular laser, locator, designator (G/VLLD) needs improvement. The current system is too bulky and requires almost half of the interior storage of the M7. The current G/VLLD must be dismantled to use. The

BFIST must have an LRAS³ type long-range sight and a smaller, lightweight target designator that is an integrated part of the M7's integrated sight unit (ISU). This would allow the BFIST to designate targets without dismounting the M7 and provide an overall more lethal system.

Mortars at the company level would greatly help the effectiveness of fire support in the mechanized fight. The two main issues arising from the absence of mortars at the company level are responsiveness of fires and the ability to echelon fires. While our task force mortars were very responsive, they were a task force asset. Many times two company teams are without fires due to a lack of resources. Additionally, current mechanized companies cannot carry all personnel and equipment with only four M2s per platoon. An additional M2 should be added to mechanized infantry platoons, as well as one M2 for the company 1SG for added security in the company trains. This addition of 4 M2s per mechanized company would add to the lethality of not only mechanized platoons but also to the survivability of the company trains and casualty evacuation (CASEVAC) situations.

Finally, the engineer community needs equipment updates and fielding in order to maintain operational tempo and pace with the maneuver forces. Engineers fighting forward in the less survivable M113s have trouble keeping pace with their supported maneuver units. To provide the responsiveness and flexibility required by commanders, engineers should be fielded the Bradley. The armored vehicle launched bridge (AVLB) proved to be a significant maintenance challenge and should be upgraded to the Wolverine immediately. Additionally, engineers need an armored breaching vehicle. The mine clearing line charge (MICLIC) was ineffective against enemy emplaced blast-resistant mines, and sappers were forced to "lasso" the mines in order to reduce an obstacle. Engineer vehicles need to be based on the same chassis as maneuver vehicles - such as the M1 and M2 - to facilitate maintenance.

Lessons Learned

- The M1 and M2 proved to be exceptionally lethal and survivable while they dominated the enemy. Continue to improve heavy armored systems.
- The LRAS³, Javelin, and SADARM are relatively new systems that proved to be a success in OIF.
- The Army desperately needs to ensure every soldier that is issued a weapon is also issued a set of PVS-7Ds or a PVS-14.
- The mechanized infantry company needs an additional M2 per platoon and one M2 for the company 1SG in order to improve lethality and provide force protection for company logistical efforts.
- The BFIST needs an improved sight and an improved target designator.
- Engineers need a more lethal vehicle that combines breaching and bridging assets.

Chapter 8 Force Modernization/Modification Tables of Organization and Equipment (MTOE)

Topic C - Survivability

Observation Synopsis

The M1 and M2 proved to be not only lethal, but exceptionally survivable as well. Throughout the conflict, M1s and M2s took thousands of hits from small arms and rocket propelled grenades (RPGs). Rarely were the vehicles affected, and even the few times they caught fire, nearly every soldier walked away unhurt. Even as the division moved hundreds of kilometers, 3ID (M) was able to maintain above a 90% combat capability for M1s and M2s. The M1 and M2 protected soldiers and proved to be the most survivable and durable equipment on the battlefield. However, the M2 needs a standard external rack system that will allow units to carry the required amounts of food, water, and personal equipment for extended combat operations.

Another system that proved very survivable was the OH-58D. During OIF the division's OH-58Ds flew over 900 combat hours, and maintained fifteen of sixteen airframes throughout the operation. These hours were typically in support of ground troops in contact. While flying, these aircraft received fire from AK-47s, RPGs, and visually fired anti-aircraft artillery (AAA) weapons. Survivability of the aircraft was due to constant movement, maneuverability, and the small size and signature of the aircraft. In order to properly support ground units and lead forces with real time reconnaissance in and around built-up areas, the Army should retain a small, maneuverable, light scout airframe.

Relatively new equipment that worked well were items such as the OTV (interceptor vest), the deployable rapid assembly shelter (DRASH) tent system, and the M1114. The OTV saved numerous lives with the protection it provided, both with and without the small arms protective inserts (SAPI). The SAPI proved effective early by stopping a 5.56 round to the chest, fired at point blank range. By utilizing the "rack system" provided by the OTV, soldiers were able to simply wear the OTV without a load bearing vest (LBV) or load bearing equipment (LCE). The OTV allowed soldiers to carry all ammunition, water, and equipment that they would have normally carried on their LBV or LCE.

The DRASH tent system worked well as a structure for division brigade level command posts. When the division tactical command post (DTAC) or division main command post (DMAIN) planned on being stationary for more than a week, they would employ one or more DRASH J-tents. J-tents provided ample space and good climate control. When combined with Biketrack flooring, the J-tent or combination of J-tents provided an excellent command and control environment.

For a more mobile command post that would be in place for a shorter amount of time, the DTAC and BCTs used DRASH 6XBs. The 6XB and optional Biketrack could be hauled on one light medium tactical vehicle (LMTV) and trailer. However, the 6XB and necessary Biketrack could be set up and completely operational in under two hours. The 6XB required no inflatable bladder and could be lifted by soldiers. Size was the main limitation of the 6XB. No more than ten to fifteen could operate inside the 6XB, which proved challenging during shift changes and when space was needed to brief a large number of people. DRASH trailers and environmental control centers (ECUs) also had several maintenance problems from the constant moving and continuous use. Units must work with DRASH contractors to develop a slightly larger frame than a 6XB, but still maintain the ability to set up without the use of the time consuming inflatable bladder. DRASH must improve trailers and make them more durable. Lastly, if

contractors do not travel with units, then soldiers must be trained on how to repair tents, trailers, and ECUs.

An area where the Army must improve is survivability of its CS and CSS units. It should replace all M1025s and other soft-skinned vehicles with the M1114. On today's battlefield, ambushes to rear elements are as much of a danger as engagements from T72s. The M1114 provides the extra protection that can protect commanders and small units as they move around the battlefield. Signal units such as retrans teams should use M113s and M577s instead of M998s. These are only a few examples of how the Army must restructure the vehicle MTOE of CS and CSS units in order to make them more survivable. While the Army must make its CS and CSS units more survivable, it must also continue to update the aging M113s and M577s. The division had to replace many of the engines and transmissions in these vehicles.

During offensive combat operations with only minimal combat power to seize objectives, mechanized divisions need additional combat power to secure routes, division level command post (CPs), and high value assets such as aviation forward arming and refueling points (FARPs) and Patriot batteries. As the 3ID (M) advanced towards Baghdad, it was difficult to commit combat power to other locations on the battlefield and take crucial assets away from maneuver units. The division desperately needed additional organic combat power to provide force protection for crucial assets. Without this, the division was forced to task BRTs, air defense artillery (ADA) units and even maneuver companies to secure routes and protect high value assets. No matter where the conflict, mechanized divisions will always have a requirement to provide force protection for key organic and echelon above division (EAD) assets, which will be further complicated under the Force XXI MTOE structure with three companies in each battalion. A recommended MTOE change for mechanized divisions is to add both an M1114 company and a mechanized company under division's MTOE. These two companies would provide much needed combat power for security.

Lastly, the Army must continue to develop a better system of combat identification for vehicles and personnel. The current combat identification panels (CIPs) were not very effective out to distances greater than 600 meters, and were not very durable. Thermal identification panels (TIPs) were more effective to identify friendly vehicles at greater distances; however, they were not very durable. The Phoenix lights worked well, but they were not standardized and batteries had to be replaced often. The Army needs to develop a more durable, integrated, and highly visible identification panel/marker to prevent fratricide during the chaos of battle. The panels/markers need to be standardized and visible in thermal, infrared, and visible spectrums. The signature needs to be active, where identification is immediate and does not require, for instance, an infrared light.

Lessons Learned

- The M1 and M2 were very durable and provided outstanding protection for our fighting forces.
- The OH-58D proved to be a very survivable aircraft and maintained a 95% operational readiness (OR) rate while flying over 900 combat hours.
- The OTV saved soldiers' lives and provided a very stable platform to carry equipment and water.
- The DRASH tent system provided a solid environment for CPs.

- The Army must provide more protection for unit trains and all CS and CSS units. The M1114 and upgraded and improved M113s and M577s must be added in large number to these units MTOE.
 - The Army must provide mechanized divisions more organic force protection units.
 - The Army must develop a standard and improved combat identification system.
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Chapter 8

Force Modernization/Modification Tables of Organization and Equipment (MTOE)

Topic D - Maintenance / Logistics

Observation Synopsis

The 3ID (M) moved over 600 kilometers in under twenty days. This feat demonstrates the ability of the division to push all classes of supply over rough terrain and during adverse weather conditions. Even with the great logistical efforts of the division, several equipment and personnel shortages were identified.

The MTOE of the division and the MTOE of all echelons above division (EAD) assets that support divisions must enable these units to move all assets simultaneously and sustain themselves over extended distances for extended periods of time. The division made numerous turns to move all assigned equipment and EAD unit equipment forward on the battlefield. This is the direct result of an inadequate number of prime movers and haul assets in the current MTOEs. To travel hundreds of miles in a short period of time requires a single lift capability across all units. During static operations or relatively slow and deliberate offensive operations, multiple lift requirements do not inhibit the advance of the attack. However, when conducting a rapid attack over extended distances, mobility and CSS equipment must maintain pace with the advance or the attacking force may lose the initiative while waiting for multiple turns.

The division can accomplish sustainment across all classes of supply when operating over extended distances with additional haul assets and fuel assets resident within the division MTOE. The idea of a dedicated corps support group (CSG) works in a static environment, but the division needs dedicated assets to conduct rapid offensive operations over extended distances and accomplish the arduous task of resupply. The division's current organization does not support sustainment over multiple days or moves. When multiple mechanized divisions are added under a corps headquarters, the problem is exponentially increased.

Not only were haul capacities insufficient at the division level, they were also lacking at the BCT and TF level. One particular TF attacked with twelve M977 cargo HEMTTs (heavy expanded mobility tactical trucks) and two M916 5-ton Lowboy tractors with trailers. One tractor was hauling the TF M1A1 roller, and the other initially carried M1A1 V-packs and the TF Sanator. The twelve cargo HEMTTs were configured with eight carrying Class V, one carrying Class I, one carrying tents and soldier bags, and two carrying Class III (P). The TF needed all of this equipment and supplies to sustain its combat operations. To haul these requirements, it had already developed load plans

and then left other headquarters and headquarters company (HHC) MTOE equipment in storage at Camp New York, Kuwait.

The Army must increase haul capacity for armor battalions by adding at least four, if not six, HEMTT trailers to the MTOE. This change would enable TFs to configure Class V combat configured loads (CCLs) on trailers and move with M978 fuel HEMTTs as prime movers, to reduce the number of vehicles the company teams must control during LOGPAC and to free up M977 to haul critical items like mounted tires or major assemblies. The shortages of haul assets were reported throughout the division. Engineer units along with division artillery (DIVARTY) both reported they did not have enough haul assets to carry all personnel, equipment, and ammunition. The Army must reevaluate the allocation of haul assets throughout the Army.

Another issue is MTOE shortages in the division cavalry squadron (Div Cav Sqn). Currently, mechanized battalions with only forty-four combat vehicles are authorized six M88A1 recovery vehicles, while the Div Cav Sqn has sixty-eight combat vehicles and is only authorized five M88A1s. The Div Cav Sqn often is separated by great distances from its aviation support battalion (ASB) and needs a minimum of two more M88A1s. Similar examples exist with the number of mechanics that are authorized in the squadron. Overall, the Army needs to overhaul the current MTOE of mechanized division cavalry squadrons to ensure they have the assets in equipment and personnel in order to maintain themselves.

Lastly, divisional engineer battalions do not have organic Level I combat health support (CHS). Divisional combat engineer battalions do not have a battalion aid station with Level I CHS capabilities. A battalion was task organized with three companies of EAD engineers and required to move and operate as an independent element. The BCT could not support this as well as other organizations that were task organized with it. Divisional engineers need to have a Level I CHS capability in order to provide medical support to EAD units task organized to them. Divisional engineer battalions should be authorized a physician's assistant (PA), additional enlisted medical personnel, and appropriate equipment (to include a field litter ambulance [FLA]) to provide Level I CHS in order to support EAD and organic engineer units task organized under engineer battalion control.

Lessons Learned

- From company to division level, all units need more haul assets to successfully complete their missions. Dedicated palletized load system (PLS) platoons need to be part of the main support battalion. This includes adequate flatracks (1077 standard) and the CHU (container handling unit). Vital to the rapid resupply of divisional troops are rough terrain container handlers (RTCH), as most of the corps and theater logistics pushes arrived on flatbed trailers with containers.
- The division cavalry squadron needs an adjusted MTOE to ensure it is allocated sufficient recovery vehicles and mechanics.
- Engineer battalions need organic battalion aid stations.

Chapter 9 Intelligence

Chapter Contents

Introduction

Topic A - Division Capabilities for Full Spectrum Operations

Topic B - Electronic Enablers

Topic C - Communications

Topic D - Electronic Warfare

Topic E - Enemy Techniques for Defeating ISR

Topic F – Echelons Above Division (EAD) Counterintelligence/Human Intelligence Support

Introduction

The planning effort and products that were tailored for the brigade S2 were the key strengths for the intelligence battlefield operating system (IBOS) in Operation IRAQI FREEDOM (OIF). Tools like TIMBUKTU and MIRC chat, as well as the G2 web page, gave analysts the ability to collaborate frequently and over great distances. Intelligence support to targeting was also a strength for the division, as the field artillery intelligence officer (FAIO) and targeting officer used the decide, detect, deliver, and assess (D³A) methodology for combat operations and stability and support operations (SASO). The unmanned aerial vehicle (UAV) targeting tactics, techniques, and procedures (TTP) and SASO threat assessment methodology were significant combat multipliers. Prior to combat operations, the division obtained, trained, and integrated several systems, such as the common ground station (CGS), PROPHET, and PPS-5D that improved its intelligence collection and processing capabilities. Finally, the G2 was able to acquire the Quick Reaction System (QRS) and the Global Broadcast System (GBS) that provided unparalleled access to current imagery for planning and targeting.

A key challenge for the intelligence battlefield operating system (IBOS) was communications, especially as they affected continuous operations over extended distances and the use of the Army Tactical Command and Control Systems (ATCCS). Commercial media, the Air Force, and the special operations community might offer good solutions for the IBOS's need for secure, long haul digital and voice communications. Simple upgrades probably cannot fix the Army Tactical Command and Control System (ATCCS) issue. The five basic systems that were originally designed to be interoperable have proven time and again to be very cumbersome with little overall value added below division. Moreover, Third Infantry Division (Mechanized) (3ID [M]) uses tactical websites (TACWEB), Automated Deep Operations Coordination System (ADOCS), and Force XXI battle command brigade and below (FBCB²) with better results. For interaction with higher headquarters and with the Marines, the division IBOS should have been able to use command and control personal computers (C²PC). The Department of Defense needs a single, integrated joint system that allows

all BOSs to manipulate relevant data and establish a true common operating picture (COP). Additionally, these systems need to be linked to an on the move, long haul communications network that will make them combat multipliers in any fighting configuration.

Lessons Learned

- The division IBOS needs an on the move, long haul communications system that provides secure voice and data communications, including access to SIPRNET, for all G2 and S2 sections.
 - Each G2 and S2 node needs to monitor four nets (higher command, internal command, internal operations and intelligence (O&I), higher O&I) without reliance on their G3 or S3 counterparts.
 - Division organic collection systems must include a tactical UAV that is dedicated and responsive to the division commander's priority intelligence requirements (PIR).
 - Division organic collection systems must include a tactical signals intelligence (SIGINT) system capable of collecting and jamming threat signals across the spectrum. It must be responsive to the division commander's PIR.
 - Expand the counterintelligence (CI) and human intelligence (HUMINT) capability in the Army and at division level. Operational demands on tactical units require more robust organic capability for collection, direction of operations, and analysis.
 - A division in full spectrum operations needs a permanent G2X to facilitate coordination and synchronization of HUMINT to include with echelons above division (EAD) assets.
 - A deployable intelligence support element (DISE) supports continuous and long-range offensive operations, as well as force projection operations.
 - Intelligence assets – both HUMINT and SIGINT – need to be placed well forward on the battlefield in order to influence the fight. Consequently, these elements need to be equipped to operate with forward units with hardened HMMWVs and crew-served weapons.
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Chapter 9 Intelligence

Topic A - Division Capabilities for Full Spectrum Operations

Issue: Divisions need organic collection and processing assets capable of responding to all aspects of the complex battlefield, to move seamlessly from combat operations to SASO, and to cover the vulnerable transition stage.

Discussion: "The complexity of the operational environment requires sharing intelligence from the national level to the tactical level and among headquarters at each level." (**FM 3.0, Operations**, p. 11-8) Our doctrine acknowledges the demands on our intelligence system in full spectrum operations and suggests some capabilities that should be available. A division must be able to collect against a commander's PIR

throughout full spectrum operations, including the intelligence dimension of SASO. As an example, it must be able to quickly integrate HUMINT assets, with corresponding demands for linguist support, operational direction, and analytical support. The division, lacking the range of collectors, processors, and supporting communications systems that would make the intelligence process seamless, is not yet ideally resourced for full spectrum operations. Moreover, reliance on EAD asset support does not provide the consistent dedicated focus that commanders expect.

Prior to the beginning of the war, the 3ID (M) received four additional common ground stations (CGS), two PPS-5D, sixteen All Source Analysis System-Light (ASAS-L), and six PROPHET systems with selected technical insertion packages, but it did not receive a dedicated UAV or some of the other capabilities requested to effectively conduct full spectrum operations. As of late October 2002, the G2 had requested six collection and jamming systems to improve organic or direct support collection for the division and nine additional processing or communications systems to improve the division's ability to produce high quality all source intelligence products. In the chart below, italics represents those systems that were not received prior to OIF.

Collection System	Capability
PPS-5D	More capable ground surveillance radar
Tactical HUMINT teams	General support HUMINT collection, interrogation support at division level, analysis and guidance for collection teams
G2X augmentation	Coordination, planning, direction, and deconfliction of all HUMINT operations in division's area of operations
<i>Long range surveillance teams</i>	Deep ISR, "eyes on" collection
PROPHET w/ tech insertions	Greater ability to acquire and locate specific and relevant enemy signals
<i>Jamming capability</i>	Ability to jam specific and relevant enemy signals

<i>Tactical UAV</i>	Near real time imagery and targeting
Processing & Communications Systems	Capability
Linguists	Arabic interpretation capability for commanders, tactical HUMINT teams (THT), civil affairs (CA), and PSYOP teams
ASAS-L	Automated database and intelligence analysis tools
Quick Reaction System (QRS)	Ability to rapidly access and exploit imagery
Global Broadcast System (GBS)	Ability to receive Predator and Hunter UAV, plus CNN
<i>National Intelligence Support Team (NIST)</i>	Rapid and reliable access to national agency databases
Counterintelligence HUMINT Information Management System(CHIMS)	Automated databases and reporting for HUMINT
Common ground station (CGS)	Proven system; division received its remaining systems in November for a total of 6
<i>TROJAN SPIRIT – LITE</i>	Long range satellite communications (voice and data) for each BCT, including an on the move system supporting interoperable IBOS requirements at the BCT level

<p><i>INMARSAT</i></p>	<p>Long range satellite communications to provide reliable digital intelligence net over extended range</p>
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A division must have a UAV at the division and brigade level. The technology exists and commanders demand it for near real time imagery and targeting. The maneuver brigades were able to benefit from the corps' emphasis on division priorities and from the mini-UAV that the special forces employed in their sectors, but the asset was never totally dedicated to division or brigade priorities.

A division needs a tactical signals intelligence (SIGINT) system that is capable of collecting and jamming threat signals across the spectrum and that is responsive to the division commander's PIR. The division's military intelligence (MI) battalion had the most recently available system, PROPHET, and it performed adequately during OIF, based on the signal environment that actually existed. The MI battalion received the PROPHET system and some technical insertions shortly before the division's attack. With this system, it was able to collect and conduct direction finding of key Republican Guard communications. It did not receive other technical insertions that would enable it to collect on other potential signals of interest or to acquire key threats likely associated with the division's transition to SASO until mid-May. The signal environment in current and future battlefields runs the gamut from tactical FM radios, to HF radios, to mobile secure cell phones, to fiber optics. The conventional Army conducting full spectrum operations on a complex battlefield requires an on-the-move collection and jamming system that can keep up with the maneuver forces and can adapt to any of these signal environments. The division, therefore, needs an organic system no less capable than those available to the special operations and theater intelligence communities. It needs to be mobile, hardened, and quickly operational. It must also have a communications package that can cover the depth and width of the battlefield to ensure reliable communications between systems and command posts.

While the MI battalion brought a solid HUMINT capability to the division with the THTs assigned to each of the three direct support companies, it did not have sufficient capability to man an enemy prisoner of war (EPW) cage, to surge collection or conduct general support operations, or to provide experienced and comprehensive analysis and guidance to operational teams. Recognizing this, the 103rd MI Battalion commander requested augmentation in the event of war; he received only partial augmentation shortly before beginning hostilities. Once the main effort became SASO, the MI battalion increased the division's HUMINT collection by parking several of its legacy SIGINT systems and using the twenty-four 98G Arabic speakers to support THT operations. This increased the number of collection teams from six to fifteen and also provided twenty-four hour coverage of a key EPW holding area.

About a year ago, the division G2 recognized that in any future conflict, the complex battlefield and potentially rapid transition to SASO would require several key CI and HUMINT positions, that were not resourced. Operation IRAQI FREEDOM validated these requirements. The division needs a G2X as a permanent part of a division G2 staff. The G2X coordinates, deconflicts, and synchronizes all HUMINT and CI operations in the division across all collection agencies. It is currently a position that is part of joint doctrine and emerging Army doctrine, having proved essential in SASO in Haiti, Bosnia, and Kosovo. Also necessary is a chief of CI operations (CI Ops), a staff position requiring the technical skills to guide operational management teams (OMT)

and THTs on the battlefield and to support the local headquarters with operational guidance based on accepted TTP and capabilities. CI Ops also checks reporting, coordinates with the G2X, and ensures that teams are reporting to standard on stated requirements. The next unresourced position is the operational management team (OMT), an operator's position needed for situational awareness, all source intelligence target folder preparation, and technical guidance for THTs for certain areas of operation. Finally, the division needs an analytical element able to identify and clarify specific orders and requests (SOR) and specific information requirements (SIR) for collection and to provide analysis of all collected HUMINT information. During OIF, the G2 and the 103rd MI Battalion established each of these positions or sections out of hide.

There are several other demands on the division-level intelligence BOS that come with a transition to SASO. The G2 and MI battalion commander had anticipated most of them and requested support prior to the conflict. Some resources, such as a sufficient number of linguists, were very late in getting to the fight. Commanders at all levels, THT, CA, and PSYOP need linguists. The division needs to establish a screening cell to conduct background checks for local hires and provide a force protection function; it is a full time job we cannot resource with organic assets. The analysis and control element (ACE) typically needs to reorganize its analysis and collection efforts to address the particular functions of a SASO mission. In the case of Baghdad, the details of infrastructure (water, power, sewage, cultural centers, mosques) were as important as emerging leaders, remaining paramilitary threat, and reestablishment of military forces. The 3ID (M) was able to adapt several tools from its previous SASO experiences to this particular operation.

Recommendations:

- A division must have a UAV at the division and brigade level. The technology exists and commanders demand it for near real time imagery and targeting.
- A division needs a tactical signals intelligence (SIGINT) system that is capable of on the move collection and jamming of threat signals across the spectrum and that is responsive to the division commander's PIR.
- Establish the G2X as an MTOE position within the division staff to facilitate coordination and synchronization of HUMINT, to include with EAD assets in full spectrum operations.
- Expand the CI and HUMINT capability in the Army and at division level. Operational demands on tactical units require more robust organic capability for collection, direction of operations, and analysis.

Issue: Common ground station (CGS) operations

Discussion: Third Infantry Division (Mechanized) had two common ground stations (CGSs) organic to its military intelligence battalion prior to June 2002. As the division conducted training rotations to Kuwait and hostilities with Iraq loomed, the division requested and received early fielding of the CGS Version 2. The MI battalion fielded and trained on the remaining four systems in November 2002. Three of the six teams had experience conducting operations with a BCT at the National Training Center or during a continental United States crisis response force rotation in Kuwait. The

remaining teams conducted training at home station and in Kuwait once the division deployed as a whole. The system proved very useful in combat operations once S2s and other supervisors recognized its strength as a cueing asset and established tactics, techniques, and procedures (TTP) to verify targets. Collaboration with other CGS crews supporting the ACE and the brigades and with the air liaison officer (ALO) and fire support elements (FSE) assisted in the target verification process. The brigade that tracked targets for three to five minutes prior to reporting also minimized inaccurate reporting and reporting on friendly units.

Recommendation: Sustain the employment of the CGS within the division, building on TTP and crew proficiency with creative training opportunities to maximize the collaborative use of the system.

Issue: Division electronic warfare capabilities (also addressed under Topic E)

Discussion: Divisional MI electronic support (ES) assets, the legacy systems AN/TRQ-32 and AN/TSQ-138 (not used in Operation IRAQI FREEDOM) and the newly acquired PROPHET system are limited in their ability to identify, collect, and locate enemy electronic emitters. Divisional electronic attack (EA) platforms are limited to the AN/TLQ-17 that can only jam in the upper HF, lower VHF spectrum. Technological advances and increased availability of commercial-off-the-shelf (COTS) packages available to threat forces have created a gap in the electronic warfare spectrum that division assets may not be able to adequately cover. There is, therefore, a requirement for early integration of technical insertion (TI) packages for the PROPHET to better train and fully install prior to hostilities.

Recommendation: Conduct an in-depth analysis of enemy EW systems early in any contingency or conflict and match friendly EW assets against them. Provide TI packages early enough to train prior to hostilities.

Issue: Timely movement of enemy prisoners of war (EPW) was a problem.

Discussion: Throughout the fight, several units had difficulty correctly tagging, moving, and securing EPW. At times, the EPW were also able to erase or modify the numbers inked on their necks. The challenges were largely a training issue and not a resource issue.

Recommendation: Develop training scenarios that involve large numbers of EPW instead of just a few to force units to think through all of the requirements for tagging, moving, and securing EPWs to standard.

Issue: Intelligence preparation of the battlefield (IPB) for the transition to stability and support operations (SASO) and in support of civil-military operations (CMO).

Discussion: The transition from warfighting to SASO is a huge shift in priorities and focus for the entire division from the soldier in the street up to the division commander. The IPB for this transition needs to begin much earlier than the change itself. IPB for

SASO needs to be concurrent with the IPB for warfighting. The IPB for warfighting focuses on the enemy — his disposition, strength, and probable courses of action. IPB for SASO focuses on the civilian population and the supporting infrastructure of the area of operations (AO). The IPB for Baghdad began months before LD; in fact, it was often the main effort at the expense of IPB focus on the fight to get there. Corps and higher focused this effort while our parallel IPB efforts focused on the road to Baghdad. While much of the IPB work done by higher was and remains useful, it is still not at the resolution required for division and below operations. Division and below staffs have to be involved to focus the effort.

CMO planning is part and parcel of warfighting in the 21st century. Practical and political considerations require planning to consider and minimize the effects of combat on the civilian population. Good IPB focused on CMO is required to plan combat operations while minimizing the impact of combat on the civilian population and supporting infrastructure. The IPB must include the ethnic makeup of regions, cities, down to neighborhoods. Restricted targets such as schools, religious sites, hospitals, and historic sites must be identified. Infrastructure is critical information for SASO. The location of water plants, sewage plants, electrical plants, and transformer stations and supporting systems are critical for SASO.

The ethnic, religious, and cultural make up of the civilian population is important in predicting the actions of population at the beginning of hostilities and when they come into contact with U.S. forces. Cultural concerns such as the religious/secular festivals and celebrations in the AO must be considered because the events may have a large number of civilians moving in the AO, including visitors from other nations. The tensions between different religious/ethnic groups and their relationship to the current government will determine how the populace greets U.S. soldiers. Cultural concerns must be identified to reduce friction between U.S. forces and the civilian population. Religious or cultural restrictions may impact the type of aid that is provided, how the aid is distributed, and who provides the aid.

The Law of Land Warfare and the Geneva Convention require U.S. forces to protect specific targets such as hospitals, schools, population centers, and religious sites. Accurate IPB is important to identify these sites and adequately protect them.

Information about the infrastructure of the AO is critical for planning and prioritizing SASO. Restoring any lost services after the cessation of hostilities is critical to establishing and legitimizing coalition control. Knowing the electrical, gas, water, and sewage distribution systems and how they are interconnected is essential to getting them functioning. Often, the facilities are intact, but not operating; knowing what facilities to restart is over half the battle.

The IPB must also identify the key locations for restoring a functioning society that will need protection such as banks, government buildings, public records, fire stations, police stations, court houses, jails/prisons and any other location that will have a significant impact on restoring the functions of a city/society. This identification enables commanders to determine risk and to allocate resources.

Recommendation: Establish civilian targets and critical infrastructure as information requirements (IR) early in the planning process. The battle staff, with support from the analysis and control element (ACE), can track and prioritize collected information and determine the relative importance of identified infrastructure and administrative sites.

Issue: UAV imagery support to the division

Discussion: The 3ID (M) did not have an attached or dedicated UAV to support its operations during OIF. When the division requirements were the corps' priority, the corps collection management team was very responsive. The 3ID (M) coordinated 24-48 hours in advance of missions to request UAV collection focus. As the missions were flown, utilizing Global Broadcast System (GBS) and two laptops equipped with MIRC Chat, all available imagery analysts in 3ID (M), V Corps, and Coalition Forces Land Component Command (CFLCC) were able to monitor the mission and provide detailed support to targeting operations. UAV missions also assisted with situation development and battle damage assessment (BDA) tracking.

The challenge with the UAV was in getting the critical intelligence to the units on the ground. Although the corps and the division ACE emailed post-mission reports to all units, many of those units did not have SIPRNET available to receive those reports when they were most critical. The remote video terminal (RVT), that was supposed to allow units to view the UAV missions, also required a unit to be stationary and within forty kilometers of the aircraft. This was not feasible given the pace of division operations. Furthermore, during several months of training with the RVT, only one unit was able to acquire a signal to watch a UAV mission for approximately thirty minutes. The most common means of providing intelligence from the UAV to units was to send it over FBCB², FM radio, or SC TACSAT. The lessons the division learned about focusing UAV collection, processing reports, and disseminating the intelligence in combat are an invaluable contribution to divisional intelligence operations.

Recommendation: A division must have a UAV at the division and the brigade level. The technology exists and commanders demand it for near real time imagery and targeting.

Issue: Divisional access to national imagery

Discussion: The national imagery asset Quick Reaction System (QRS) that 3ID (M) obtained for OIF was a critical resource for the division's imagery team. Without the expertise, separate communications packages, and immediate integration into the ACE, many intelligence gaps would have remained. The DMAIN was operational from a 5-ton expando van with an eleven-piece, four million dollar system. The system was habitually operational within forty-five minutes in order to begin producing imagery in support of the division commander and brigade commanders. It sustained no damage or loss in eight tactical jumps.

Recommendation: Provide the QRS or similar capability, including NIMA expertise and separate reliable communications, to divisions for future combat and contingency operations. While probably impractical to permanently obtain such capability for the tactical level, its support to this echelon is essential.

Chapter 9
Intelligence
Topic B - Electronic Enablers

Introduction

The primary electronic enabler* for the intelligence battlefield operating system (IBOS) is the All Source Analysis System (ASAS) series. At the division analysis and control element (ACE), the ASAS comprises the all source enclave (ASE) and the single source enclave (SSE). At the G2 operations, brigade, and some battalion levels, the systems include the ASAS-Remote Workstation (ASAS-RWS) or ASAS-Light (ASAS-L). In accordance with the concept of the Army Tactical Command and Control System (ATCCS), the ASAS should be able to exchange information with each of the other ATCCS boxes to provide commanders with a common operating picture (COP) of friendly and enemy activity. During OIF, 3ID (M) relied on the Maneuver Control System-Light (MCS-L), command and control personal computers (C²PC), Force XXI battle command brigade and below (FBCB²), and Automated Deep Operations Coordination System (ADOCS) to provide a COP at various levels. ASAS could provide an enemy picture to all but FBCB², but not without some initial challenges. For much of OIF, however, the inability of the RWS and the ASAS-L to effectively operate on the move was a limitation that reduced their value to and use by divisional units.

Each of the ATCCS boxes has its merits for its respective BOS. What is not yet seamless is their ability to exchange information with other BOS systems and with other services. It has proven cumbersome and of marginal utility, suggesting the need to go to a single, integrated, joint system that relies on a long haul on the move communications system. See Topic C: Communications, for further explanation of this issue.

*An automated system designed to increase the capability of units on the modern battlefield

Issue: ADOCS and counterfire integration into the ASAS

Discussion: ADOCS was an invaluable tool for situational awareness and quick analysis of counterfire acquisitions. ADOCS was also linked in to the ASAS and could receive the ASAS common relevant enemy picture. ADOCS enabled the DIVARTY S2 to quickly analyze a counterfire acquisition, apply it on the screen to the enemy situation either through the ASAS correlated database feed or through a templated overlay on the ADOCS itself, make an assessment of what systems or unit was at that location, and quickly provide the relevant analysis to both the DIVARTY commander and the division G-2. We were not able to completely work through the ADOCS connectivity with ASAS prior to LD in order to provide the counterfire common operational picture (COP) through ASAS to all of the major subordinate commands (MSC) S-2s. Given more time following this operation and redeployment, we can continue to work the connectivity between the ASAS and the ADOCS.

Recommendation: Retain ADOCS at the DIVARTY TOC and as a central element of the counterfire fight. Continue to work the connectivity between the ADOCS and the ASAS in order to easily disseminate the counterfire common operational picture (COP) to all of the major subordinate commands (MSCs)/BCTs. Integrate this capability into a single, joint system that provides a COP across all BOS.

Issue: Units did not use ASAS-RWS or ASAS-L

Discussion: As a result of the division's fast-paced operations during the first several days of the war, the mobile subscriber equipment (MSE) network was not often established for the DTAC and the maneuver brigades. Because ASAS and other ATCCS boxes depend on MSE for data transmission, few MSCs chose to use the ASAS-RWS or the ASAS-L. This was partly a function of the system itself and largely a function of the supporting communications. The ASAS-RWS takes a long time to set up and establish operations. In a fast-paced operation such as Operation IRAQI FREEDOM where the DTAC and the maneuver brigade TOCs initially did not typically stop for much longer than four hours, an MSC TOC would not often take the time (approximately 45 minutes to an hour) to set up and boot the ASAS-RWS. Additionally, the data on the RWS, became an inaccurate portrayal of the enemy situation. When the communications permitted, exchanging overlays proved to be more effective. To satisfy all the different combat and combat support units, the overlay included the entire correlated database. An overlay cannot be manipulated in the same way as an external database coordinate (EDC) that can filter out or query for specific types of units and show the commander only the information that he wants to see.

Recommendation: Refine the ASAS-RWS and ASAS-L to incorporate the most effective features of ADOCS. Integrate the capabilities of ASAS into a single, joint system that provides a COP across all BOS.

Issue: Army weather support

Discussion: The Integrated Meteorological System (IMETS) is an Army developed and maintained system that is part of the ATCCS series. For the first time in the system's over ten year history, the IMETS actually worked. It was successfully integrated with SIPRNET and TROJAN SPIRIT, as well as with an Air Force satellite receiver, and the web page was effective. The IMETS also proved invaluable as a rolling platform for all weather systems. Having most of our equipment rack-mounted in a ready state was critical. At all times during our convoys we had the ability to stop the vehicle and rapidly set up to receive data within five minutes, and occasionally we had to do precisely that. Within the IMETS itself, software packages such as the Integrated Weather Effects Decision Aid (IWEDA) was very useful and the chemical downwind message (CDM) capability was equally powerful.

The IMETS program is in serious jeopardy of being reduced or cancelled. This is particularly frustrating since the system has now finally proven its worth in war. Not only should this system be maintained, its capability should be expanded to serve as a base for all tactical weather equipment. Possible additions to the IMETS are a satellite dish mount for the tactical very small aperture terminal and a mount for the Tactical Meteorology Observing System. With these systems fully integrated both physically and from a software standpoint, the IMETS would be the backbone of Army weather support.

Recommendation: Retain and expand the capabilities of the IMETS to serve as the backbone of Army weather support.

Chapter 9 Intelligence Topic C - Communications

Issue: The communications available to the IBOS during OIF were insufficient to ensure timely, accurate, and relevant intelligence dissemination across the entire battlefield.

Discussion: “The intelligence BOS cannot effectively or efficiently provide IEW support without adequate communications equipment, capacity, and connectivity.” (**FM 34-1, *Intelligence and Electronic Warfare Operations***, p. 1-14.) Put more simply, if you aren’t talking, you’re just camping. Intelligence operations, in particular, are irrelevant without the ability to communicate, to pull information from higher, and to push information to subordinate units. Operation IRAQI FREEDOM highlighted the need for a deliberate investment in reliable voice and data communications to support the IBOS at all levels. The division’s continuous offensive operations over extended distances meant that units quickly outran the ability to use FM for the division operations and operations and intelligence (O&I) net and for any exchange of digital information.

The division had some single channel tactical satellite (SC TACSAT) systems with a 5 kHz bandwidth to establish key division nets, and after redistribution within the division, the G2 established a TACSAT O&I net. Initially the look angle allocated to the O&I net made reliable communications nearly impossible. It was extremely difficult to acquire and maintain the signal while the DTAC was static; it did not work at all on the move. Just before the division’s attack, we received different data for the command net, and the O&I net was able to use the previous command net data. Some of the DTAC noncommissioned officers figured out how to rig the antenna to allow on-the-move voice communications, and we were able to exchange voice intelligence reports between the DTAC, DISE, G2 operations, brigades, and the MI battalion. We had to adjust the antenna often, and we had to use very slow and deliberate speech to communicate, a limitation and challenge of the 5 kHz bandwidth. We were not able to pass any data over this means, making our digital intelligence systems—the ASAS-RWS and ASAS-L—dependent on SIPRNET communications, that were only available when the command posts operated from the halt for an extended period of time. The TACSAT O&I net, though challenging to operate and to maintain, was the primary means of communication between the DTAC, DISE, brigades, MI battalion, and G2 operations. Despite this fact, all three maneuver brigades, the aviation brigade, and the corps G2 lost their O&I TACSAT systems when a system supporting the command net went down. This forced us to rely on multiple FM relays or on FBCB² to exchange intelligence, proving unreliable or inefficient.

Though not intended to support intelligence operations, FBCB²-BFT did provide a redundant means of communicating key intelligence. The DTAC established an address group for free text messages that included commanders, XO’s, and S3s in order to disseminate intelligence reports and weather reports. Because the primary communications method was not always available to all S2s, the DTAC established the TTP of sending intelligence reports over the TACSAT O&I, the FM O&I, and over FBCB². It usually took about three short messages to send a single INTREP, based on the amount of data the system could handle. It was not a perfect dissemination method. Some messages never got through. Two of the separate battalions, the MI battalion

and the air defense battalion, did not have a single FBCB² system to receive INTREPs; other units, such as the engineer brigade, had only a single system in a commander's vehicle. FBCB² did, however, provide a means of reaching most of those without TACSAT or FM communications.

In addition to the need for TACSAT or similar long-range communications, OIF highlighted the need for battalion and brigade S2s to have additional radio systems. Each brigade established a series of command posts that dispersed the S2 sections more than had previously been typical. The configurations included a tactical command post (TAC) and a red, amber, and green tactical operations center (TOC) or a TAC, TOC A, and TOC B configuration. There was usually an S2 representative at each post. What became very clear was that to maintain complete situational awareness and conduct all expected reporting, the S2 needed access in all cases to the brigade command net, the brigade O&I net, and the division O&I net.

The same held true for the DTAC. Much of the reporting of intelligence value from the brigades came over the division command net. The command and control vehicle (C²V) in which representatives from the G2, division chemical, engineer, and air defense brigades rode did not have a TACSAT system for the command net. While we were able to monitor some events when the inter-C²V intercom system was working, it was absolutely insufficient, and it affected four battlefield operating systems (BOS). The lesson here is that every unit, every BOS must have the system to monitor the primary division command net. Based on the amount of information that was also exchanged over the corps command net, every BOS must also have the system to monitor the primary corps command net. Whether the command post operates in a tent, building, or other shelter or operates from a vehicle like the C²V that puts several BOS together, there is an economy or an efficiency that justifies the cost of obtaining these systems. Several BOSs can monitor and benefit from the one system.

The inability to rely on the MSE backbone during continuous offensive operations also hindered the use of digital systems like RWS, ASAS-L, MCS-L, and ADOCS that currently depend on MSE. Also, maneuver battalions do not have MSE, so S2s at that level do not have a means of connectivity for ASAS-L. We should be able to pass data over FM to support the ASAS-L, but during field-testing through December and January, it proved unacceptable in terms of range and rate of exchange. Furthermore, battalion S2s do not generally have the extra radio to support data exchange; using one radio for voice and data did not work. Consequently, the intelligence system designed to provide an automated capability to a battalion S2, was of little value to him.

Recommendations:

- Procure an on the move long haul communications system that provides secure voice and data communications, including access to SIPRNET, for all G2 and S2 sections.
- Moreover, ensure each G2 and S2 node can monitor four nets (higher command, internal command, internal O&I, higher O&I) without reliance on their G3 or S3 counterparts.
- Consult the special operations community, the Air Force, and the news media for examples of the best in technological solutions.

Issue: The division's establishment of a deployable intelligence support element (DISE) was critical to providing intelligence support to the DTAC and to brigades forward on the battlefield.

Discussion: **FM 34-1, *Intelligence and Electronic Warfare Operations*** discusses the concept of a DISE in support of force projection operations, which was the course of the Army following the Cold War. This current doctrine refers to the DISE as a means of conducting split-based operations, as the bridge between a forward-deployed force and an intelligence support base located outside of the deployed AO. It requires communications, automated intelligence fusion, and broadcast dissemination. Several units have employed a DISE to support contingency operations in Haiti, Bosnia, or Africa. None have yet employed a DISE in combat operations.

The division's establishment and deployment of a DISE was not a means of prepositioning an intelligence node forward from which to pull from a sanctuary or base. Instead, it was a response to the demand for an intelligence node with stable communications and access to corps, theater, and national intelligence products to support the DTAC and forward brigades who were all on the move almost constantly for over 72 hours. The DISE, collocated with 224th MI Battalion at Camp Udairi, maintained SIPRNET access to external intelligence products and TACSAT O&I communications with brigades and the DTAC.

Recommendations:

- Sustain the concept of a DISE to support similar continuous and long-range offensive operations. The division must plan for continuous intelligence process to ensure all ISR feeds are injected into the decision-making process; the DISE is a good solution.
 - Resource a base DISE by MTOE around which to tailor mission-specific needs. Be prepared to deploy a DISE with an alternate command post such as the engineer brigade CP or the DIVARTY CP in the event that the DTAC and the DMAIN move simultaneously.
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Issue: Weather effects on communications

Discussion: Air Force research labs and the Integrated Meteorological System (IMETS) program office have developed a prototype system for forecasting space weather impacts on communications systems such as high frequency (HF) radio and UHF satellite communications (SATCOM) and also for forecasting the accuracy of Global Positioning System (GPS) receivers. The tactical version of this system, called TacSEND (Tactical Space Environment Network Display), was deployed for the first time with 31D (M). Applications include signal intelligence gathering, signal intelligence denial, HF radio frequency selection and management, forecasting friendly/enemy HF radio jamming effectiveness, forecasting the error experienced by GPS receivers, and warning users of losses in SATCOM due to environmental causes. TacSEND products proved very useful, especially in the area of troubleshooting HF radio communication problems. The next step for this prototype is full integration of the system, both hardware and software, with the IMETS.

Recommendation: Sustain development of this system with the goal of full integration with IMETS and other electronic enablers.

Chapter 9 **Intelligence** **Topic D - Electronic Warfare**

Issue: Division electronic warfare capabilities

Discussion: Divisional MI electronic support (ES) assets, the legacy systems AN/TRQ-32 and AN/TSQ-138 (not used in Operation IRAQI FREEDOM), and the newly acquired PROPHET system are limited in their ability to identify, collect, and locate enemy electronic emitters. Divisional electronic attack (EA) platforms are limited to the AN/TLQ-17 that can only jam in the upper HF, lower VHF spectrum. Technological advances and increased availability of commercial-off-the-shelf (COTS) packages available to threat forces have created a gap in the electronic warfare spectrum that divisional assets cannot adequately cover. There is, therefore, a need to augment divisional capabilities with the purchase or coordination for COTS packages or a new fielding that is easily upgraded with technology shifts.

Recommendation: Conduct an in-depth analysis of enemy EW systems early in any contingency or conflict and match friendly EW assets against them. Provide TI packages early enough to train prior to hostilities.

Issue: Use of ground-based electronic attack

Discussion: Electronic attack (EA) – utilizing the TLQ-17A – proved to be a true combat multiplier. EA missions were deliberately planned to complement lethal fires as part of the division's overall fires plan for the destruction of the border guards. When executed, the jamming disrupted the enemy's ability to react to the application of lethal fires and contributed to the destruction of the border guard forces in the opening hours of the war. As the fight progressed, EA was placed on negative control – allowing certain voice nets, such as artillery fires nets and ADA nets, to be jammed as acquired, contributing to the protection of the force.

Recommendation: Retain ground-based EA capability at the division level. Integrate non-lethal fires into the division's overall concept of fire support. Place EA targets on the antitank guided missile (ATGM) and ensure that non-lethal fires complement deliberate lethal fires at crucial points in the battle.

Issue: Detailed analysis of enemy EW capabilities and systems

Discussion: Prior to crossing the line of departure, there were nine dedicated months of research conducted on Iraqi EW and communications systems. National databases existed and were available, but were difficult to use and understand, and sometimes only annually updated. However, Iraqi forces continued to develop alternate means of

communication and procured COTS systems like GPS jammers, INMARSAT, and Thuraya satellite phones. One product that was helpful in understanding the Iraqi Regular Army (RA) and Republican Guard (RG) communications structure was the INNET diagrams posted on the National Ground Intelligence Center (NGIC) Iraq website. Basically, the diagram mapped out the communications structure for a “typical” RA or RG unit from corps down to platoon level for each mechanized, light, and armor unit. Specialty units, such as the surface-to-surface missile (SSM) brigade, FA units, and Integrated Air Defense Systems were also mapped out. The actual format and viewer used to access this information made it difficult and cumbersome. What did help was actually stitching the diagram together from screen captures, having the topographic team print the diagram to a useable size (36” x 42”), and then conducting analysis on key nodes for each type communications band used (HF, VHF, LOS multichannel [UHF]). After the analysis, the electronic warfare officer (EWO) created a Power Point presentation for each specific type of unit, focusing on the key nodes that we could acquire and disrupt. The product was extremely useful in directing collection operations, resulting in the MI battalion sending 895 klieglights (KL), shooting 376 lines of bearing (LOB), and executing 47 successful EA missions.

Recommendation: Research and develop this type of product for home station training, as well as for all deployments, to build target expertise.

Chapter 9

Intelligence

Topic E - Enemy Techniques for Defeating ISR

Introduction

One of the strengths of the U.S. Army is access to sophisticated intelligence collection systems. The Iraqi leadership did its homework, learning lessons about how the U.S. Army from DESERT STORM and from watching U.S. forces operate in Somalia, Bosnia, Kosovo, and after 11 September 2001. This chapter captures what U.S. troops observed as methods the Iraqi forces used to deceive or defeat U.S. intelligence, surveillance, and reconnaissance efforts and to complicate or frustrate targeting.

- Enemy tactics, techniques, and procedures (TTP)
- Put soldiers in civilian clothes and operated in conjunction with civilian population
- Used civilian transportation—taxis, trucks, buses—to move troops, to reinforce units, and to conduct paramilitary operations
- Used non-tactical vehicles en masse to draw Joint Surveillance and Attack Radar System (JSTARS) to formations, but moved actual units in platoon or smaller sizes
- Used residential areas—perceived sanctuary areas—to conceal equipment (parked artillery next to schools and homes)
- Used motorcycles to conduct reconnaissance and report on friendly unit operations
- Used hospitals, mosques, schools as weapons caches or places from which to stage attacks

- Conducted movement in sand storms and other bad weather to avoid UAV and aerial reconnaissance
 - Established ammunition supply points early and in many different locations to limit movement of CSS once war began
 - Dispersed key systems, deploying artillery in platoon-sized or smaller position areas for artillery (PAAs) instead of battalion-sized
 - Used mobile mortars fired from civilian areas to draw counterfire, then moved quickly
 - Used non-emitter systems, such as ZU 23, ZPU 2/4, SPG, RPG
 - Used reverse encryption - reversed chip in Baghdad police Motorolas, possibly for antimilitary collections or for domestic security reasons (avoided commercial scanners)
 - Used low-power communications
 - Used couriers in lieu of radios from company to brigade
 - Used landline or fiber optics from battalion to corps (coalition did not destroy all)
 - Used analog early warning technique reminiscent of Mogadishu. They turned city lights off on a grid to signal incoming aviation attack
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Chapter 9

Intelligence

Topic F – Echelon Above Division

Counterintelligence/Human Intelligence (CI/HUMINT) Support

Introduction

The integration of special operations force (SOF) and other government agency (OGA) elements with conventional forces during OIF was unparalleled in modern history. The mission profiles and skill sets that each element provided enhanced the operational capabilities of the others. The conventional, heavy division's combat forces provided a mobile and secure base from which SOF and OGA could conduct direct action (DA), special reconnaissance (SR), and unconventional warfare (UW) operations in the zone of attack. SOF, and to a lesser extent OGA, provided an enhanced capability to extend the division's intelligence, surveillance, and reconnaissance (ISR) capabilities. Additionally, the SOF/OGA skill sets that allow them to interact with and coopt indigenous personnel proved useful to 3ID (M) during movement and subsequent operation as TF Baghdad.

Traditionally, SOF and OGA operate in the deep battlespace, usually inserting via fixed or rotary-winged means for short duration operations. During OIF, SOF and OGA teams traveled embedded within brigade formations and remained embedded even during the early stages of Phase IV in the city of Baghdad for the same reasons – security and logistical support. The SOF elements acted as a liaison between 3ID (M)

and OGA, although senior members of the 3ID (M) command and staff were directly involved with OGA planners and operators well prior to G-day.

Overall, the relationship was a positive one in spite of the cultural differences between SOF and conventional forces that often create friction points between these elements. SOF and OGA planners realized that the best method of infiltration for a large percentage of their elements was via a mechanized division. By building close relationships early, this partnership greatly enhanced the range, duration, and overall success of their operations. Although it can be argued effectively that the 3ID (M) provided more than what it received, overall SOF and OGA provided an enhanced capability to the division to “read” the enemy and the local populace, and their targeting and reconnaissance skills brought much to improve the division’s situational awareness during combat operations.

Issue: Expectations of intelligence

Discussion: There were some disappointments, perhaps the greatest of which was the mistaken perception that an Iraqi Regular Army (RA) Division would capitulate en masse near An Nasiriyah. Neither SOF nor OGA operators ever made such a claim directly; it was always presented as a possibility. The perception, based upon sensitive HUMINT operations that were unfolding as G-day loomed nearer, was that capitulation was very likely. Even with the disclaimers from the OGA, the overall perception remained that at least two brigades would capitulate. The appearance of many articles of capitulation just prior to G-day from CFLCC enhanced the perception. A catch phrase was even coined which reflected this optimistic view: “movement to parade.” The reality was that there was no coherent force that was going to formally capitulate. The RA soldiers in An Nasiriyah took the path of least resistance and avoided the stigma of being an EPW by merely deserting their positions and melting back into the populace. This left a determined yet ineffective force of Ba’athist hardliners to man the lines.

Recommendation: Assuming that SOF, OGA, and conventional forces will continue to share battlespace and work towards common goals in future conflicts, integrate SOF and OGA reporting or analysts earlier into all echelons of the planning process. This would provide a clearer and more consistent line from strategic intelligence assessments to related operations at the strategic, operational, and tactical levels.

Issue: Compartmentalization of information

Discussion: Compartmentalization of information was a challenge throughout OIF, in no small part because of the traditional roles and associated sensitivity of SOF and OGA operations. A component of this issue is the targeting process. These organizations had targets and missions of national interest, but they were operating in a division’s battlespace. During the division’s latter planning phases, SOF and OGA representatives visited the division to discuss requirements and exchange information. Recipients of that information were usually the command group and selected staff and plans officers. At times, only the command group received critical information, denying the staff the opportunity to integrate and act on it. Special forces liaison elements (SFLE) met with the brigades in whose battlespace their teams would operate.

Throughout the early days of the war, the SFLE provided some key information to units that would have been otherwise unavailable. An example was the identification of Mogadishu-style signaling of local combatants: SF teams identified a connection between lights going out in a town and residents taking up arms to fire at approaching aircraft. Much of the successful information exchange was more personality-dependent than based upon an established and common process or SOP. The location of Saddam Hussein was another example. Open source reports suggested the President of the United States was receiving continuous reporting from a source with eyes on Saddam Hussein, assuring him that he was inside a building targeted for a strike. That building was in the division's battlespace, however. Information like this did not always reach the division staff level at a point where it could have contributed to the bigger picture intelligence assessment. Information resulting from SOF exploitation of sensitive sites during the SASO phase of OIF was not easily shared with conventional forces, though those sites were in their battlespace.

Recommendations:

- Integrate SOF and OGA representatives as early as possible into the tactical level planning process.
- Identify specific command and staff positions with a "need to know" to ensure all echelons understand planned SOF and OGA operations in the division's battlespace.
- Ensure those individuals integrate information received and disseminate it appropriately—to include information like protected target lists—for planning and for overall situational awareness.
- Plan for and resource the communications required for dissemination of SOF and OGA reports into the overall communications plan to resource

Issue: Collaborative operations

Discussion: Even with all the HUMINT collection that the SOF, special mission units (SMU), and OGA could bring to bear against former regime targets, quite often the tip or lead that resulted in the capture of an individual on the black list came from local casual sources cultivated by 3ID (M) tactical HUMINT teams (THT) or walk-ins. This was more a reflection of the density of 3ID (M) soldiers in Baghdad than of the SOF/OGA skills in conducting HUMINT collection. Having SOF and OGA embedded from the beginning of combat operations within 3ID (M)'s formations allowed a rapid turn-around from the point of collection on a potential black list personality to conducting an operation to detain the individual. The information exchange on the ground directly between operational elements was a key factor in many of the successful detention operations. Normal reporting channels would not have met information requirements for timeliness.

Recommendations:

- Sustain collaboration between SOF, OGA, and conventional forces for operations of this kind that require tactical operations against targets of national or strategic interest.
- Formalize and rehearse reporting SOPs during the planning and preparations of such operations. Ensure timely dissemination to all echelons is a component of the plan.

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Chapter 10 Maneuver

Chapter Contents

Introduction

Topic A - Trained and Mature Unit

Topic B - Additional Requirements for Personnel and Equipment

Topic C - Capabilities, Combat ID, and Tactics, Techniques, and Procedures (TTPs)

Introduction

During Operation IRAQI FREEDOM (OIF) the Third Infantry Division (Mechanized) (3ID [M]) proved that a lethal, flexible, and disciplined force can continuously maneuver over 600 kilometers. The division's successful maneuver was possible due to the superior training conducted in the United States and Kuwait. This training allowed the division to maneuver and destroy enemy forces with direct and indirect fires from Kuwait to Baghdad. The ability of the brigade and battalion commanders to integrate fires and tactical movement ensured battlefield success.

Lessons Learned

- The division fought to train under realistic conditions in preparation for combat. The priorities were clear, and subordinate leaders executed the training above standard. This produced a disciplined, lethal, and flexible force capable of accomplishing any tactical task.
- All units must train to secure themselves. Maneuver forces cannot cover the entire battlespace to protect all assets. Combat support (CS) and combat service support (CSS) units must train to a level of proficiency that allows them to defend against rear area threats.
- All units must train to contain urban areas to protect the main body. Units may not need to enter into each urban area, but must keep enemy forces from influencing other passing convoys.
- The requirement for tough realistic training has not changed in the past 227 years. The division lived under the "train as you fight motto" for the 12 months that preceded the war. The training proficiency, lethality, and maturity of the division serves as the example for the Army to follow.
- The complex battlefield demands that units execute missions under a constrained timeline. Training must include complex missions that force units to issue verbal fragmentary orders (FRAGOS) with very little time and knowledge of enemy forces.
- Divisions need a political advisor during all Battle Command Training Program (BCTP) rotations and must deploy a team that can advise the commander on strategic issues.

- Divisions need an M1114 company and a mechanized company under the control of the division headquarters. These two companies will provide the much-needed combat power for various security missions.
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Chapter 10

Maneuver

Topic A - Trained and Mature Unit

Issue: The success of the division's operations in Iraq can be directly attributed to the unit's mature leaders and high level of training.

Discussion: The division crossed the line of departure (LD) with a mature and trained group of staff officer and commanders. The division stabilized all company commander and field grade officers after conducting multiple CONUS contingency response force (CCRF) and National Training Center (NTC) rotations. This produced a mature fighting force that was trained and ready to fight and win on the battlefields of Iraq.

A direct correlation can be drawn between the division's training cycle prior to crossing the line of departure and the division's successful attack into Iraq. Battalions conducted externally evaluated force on force and live fire operations focused on offensive operations. Rifle squads conducted combined arms operations focused on entering and clearing a trench and room. These two training events focused the entire division on the exact missions soldiers would execute in combat weeks later.

The division conducted a rehearsal of the operation in Kuwait with every commander in the division. Command posts (CPs) at all levels participated in the rehearsal and executed the exact movement plan they executed in combat. This rehearsal served its intended purpose as a synchronization medium and identified several points of friction that the division was able to correct prior to crossing the LD.

The division artillery (DIVARTY) conducted a live fire training event prior to crossing the LD that ensured every firing battery was trained and ready to mass fires anywhere or anytime on the modern day battlefield.

The 4th Brigade (BDE) trained both hasty attacks in support of the ground maneuver commander and shaping operations under the brigade commander's control while in Kuwait. This served to not only synchronize the brigade's internal aviation assets, but also to synchronize the division's aviation with ground maneuver forces. The tactics, techniques, and procedures (TTPs) established between 4th BDE and the maneuver brigades facilitated the rapid and safe employment of attack aviation in the close fight.

The division fought to train under realistic conditions in preparation for combat. The priorities were clear, and subordinate leaders executed the training above standard. This training produced a disciplined, lethal, and flexible force capable of accomplishing any tactical task.

Recommendation: The requirement for tough realistic training has not changed in the past 227 years. The division lived under the "train as you fight motto" for the 12 months that proceeded the war. The training proficiency, lethality, and maturity of the division must serve as the example for the Army to follow.

Issue: Combat Training Centers (CTCs) can adopt lessons learned from OIF to better prepare units for future conflicts

Discussion: CTCs prepare units for combat. The following focus areas should be addressed:

During OIF, 3ID (M) was forced to address urban areas. Anytime routes went an urban area, forces had to be employed to isolate the city in order for maneuver, combat support (CS), and combat service support (CSS) units to pass on to the final objective.

When urban areas were not addressed, both Republican Guard and Regime Death Squads used built-up areas to plan and initiate attacks on coalition forces. More enemy forces than originally planned occupied urban areas enroute to Baghdad. All units must train to contain urban areas to protect the main body. Units may not need to enter into each urban area, but they must keep enemy forces from influencing other passing convoys.

As 3ID (M) moved north, the terrain became very restrictive. As the desert quickly changed to elevated roads with restrictive terrain, units were forced to travel along a single route for hours. Well-planned and enforced movement tables must be trained. Without a solid movement plan, critical assets may not reach a crucial place on the battlefield at a desired time.

All units must train to secure themselves. Even with pockets of resistance in urban areas and not all main supply routes (MSRs) completely secure, CS and CSS assets must be pushed forward. Units will not be able to rely on maneuver units to provide constant convoy security. All units must focus on securing themselves during convoy operations.

The complex battlefield demands that units execute missions under a constrained timeline. Training must include complex missions that force units to issue verbal FRAGOS with very little time and knowledge of enemy forces.

Recommendation: All units must train on the containment of built-up areas during their CTC rotations. Training should include civilians, conventional enemy forces, and irregular forces. Restrictive terrain and urban terrain training is an absolute necessity during home station and CTC training events. CS/CSS units must train to provide local security without armored vehicle augmentation. Units must train to execute short notice missions with little notice or planning.

Issue: Training focus

Discussion: The pace and focus of training at the platoon through task force level was outstanding. The ability to execute receiving, staging, onward movement, and integration (RSOI) in conjunction with company situational training exercises (STX) lanes graduating to task force maneuver lanes and culminating in a task force live fire, showed that a focused effort by leaders and soldiers can produce a trained and ready combat unit in 12 days.

Recommendation: Continue to focus and resource training that maximizes training windows and challenges soldiers and leaders. Live fire training is the standard to

prepare units for combat. MOUT live fire demands the same emphasis as a Table XII gunnery density and must be resourced as a major training focus for the battalions.

Issue: Urban training

Discussion: Now that we have proven we can successfully employ armor in an urban environment, we must gear our individual and collective training toward that objective. Most engagement ranges were less than 200 meters - something we never train. Additionally the crew coordination of close combat is entirely different than Tank Table VIII gunnery (shooting out of your 3X power sight and battle sight indexed at 200ms).

Recommendation: Update gunnery tables to include urban type engagements and greatly reduced ranges.

Issue: MOUT training

Discussion: During the BCT train up, the focus of military operations on urban terrain (MOUT) training was on the infantry units, using armor primarily in a follow and support role. During much of the urban fighting, tanks were the primary attack forces. The deficiency in urban warfare training for the tank crews was noticeable and forced units to create “on the spot” tactics, techniques, and procedures (TTPs).

Recommendation: Develop realistic TTPs during training events, include urban warfare training where tanks lead attacks into built-up areas with the infantry in a follow and support role and develop training and evaluation outlines for MOUT tasks for tank companies

Issue: Teamwork

Discussion: Many factors, tangible and intangible, contributed to the division’s mission success, but the teamwork of key leaders and supporting arms was vital. We avoided “rice bowl” protection and “gave way together” to get the job done. Habitual unit relationships were routinely severed to ensure adequate support to the main effort. The efforts of our air liaison officers (ALOs) and enlisted terminal attack controllers (ETACs) demonstrated “gauntness” in action – with no concern for who “gets credit” for mission success — one team, one fight, one successful mission. The commendable end result was directly attributable to the months of tough training and close personal relationships that only true professional organizations produce and sustain.

Recommendation: Sustain the teamwork and guard against the post-war degradation back to the “rice bowl” mentality. Already evident in the press, we cannot fall prey to dividing our great joint success into stovepipe success. A synchronized team jointly focused on a clear task and purpose delivered this win for the Iraqi people.

Chapter 10 Maneuver

Topic B - Additional Requirements for Personnel and Equipment

Issue: The division on today’s battlefield operates at the tactical, operational, and strategic level.

Discussion: A division operating at the strategic level is generally not addressed. The influence of real time media forces the actions of all combatants into the world's view. This media coverage can place the actions of a single commander into the strategic realm. The lack of a political advisor (POLAD) leaves the division without a dedicated staff proponent to assist in these complex issues. The role of a political advisor at the division level is to advise the commander on political issues and liaison with the corps' political advisor. There are several challenges that a political advisor to a division commander could face.

A division's POLAD has no habitual relationship with the state department to determine the administrations' current position. This can create friction between the division and higher headquarters if the POLAD's advice is not aligned with the commander in chief's (CINC) guidance from the National Command Authority (NCA). It is imperative that commanders align their decisions with current policies and orders from higher and merely use the POLAD as an advisor. A common understanding of the political ramifications of each decision must be understood on today's battlefield.

Recommendation: Include a political advisor in all BCTP rotations and deploy every division in the Army with a team that can advise the commander on strategic issues.

Issue: During offensive combat operations, divisions need additional combat power to secure routes, division level CPs, forward arming and refueling points (FARPs), and Patriot batteries.

Discussion: When the Army changed from four to three companies per battalion, the brigade commander was left with very few options for security requirements. Three companies are required to conduct most tactical missions. When mechanized platoons or companies are required to secure high value assets, the battalion fighting unit is severely degraded.

The division needs additional organic combat power to secure crucial assets. Mechanized divisions will always have a requirement to secure routes for CS and CSS assets, protect FARPs and other higher echelon units. During OIF, companies of combat power were dedicated to security missions, which severely degraded the number of gun tubes in the close fight,

Recommendation: Change the modification table of organization and equipment (MTOE) for mechanized divisions to add both an M1114 company and a mechanized company under the control of the division headquarters. These two companies would provide the much needed combat power for security. It would also allow brigade reconnaissance troops (BRTs) and mechanized platoons to stay under the control of their parent unit. This combined with CS/CSS "self-defense" training will enable the division to keep the battalions at full strength for the battles.

Issue: Sniper employment in urban operations.

Discussion: Snipers are essential for infantry task force operations and they need the ability to engage personnel and equipment at ranges beyond 1 km. There are no dedicated vehicles for snipers. The companies had to support them.

Recommendation: Change mechanized infantry MTOE to reflect a sniper section equipped with 7.62 and 50 caliber weapon capability. The sniper section requires organic vehicles.

Chapter 10
Maneuver
Topic C - Capabilities, Combat Identification, and Tactics,
Techniques, and Procedures (TTPs)

Issue: Role of heavy forces

Discussion: This war was won in large measure, because the enemy could not achieve decisive effects against our armored fighting vehicles. While many contributing factors helped shape the battlespace (air interdiction (AI), close air support (CAS), artillery), ultimately war demands closure with an enemy force within the minimum safe distance (MSD) of supporting CAS and artillery. Our armored combat systems enabled us to close with and destroy, with impunity, the heavily armored and fanatically determined enemy force often within urban terrain. No other ground combat system currently in our arsenal could have delivered similar mission success without accepting enormous casualties, particularly in urban terrain. This is not an anomaly. We will face similar threats, by equally well-armed and determined enemy forces in multiple battlefields the world over. Decisive combat power is essential, and only heavy armored forces provide this capability.

Recommendation: Sustain a robust heavy armored force in our regular army arsenal. Whether that is with the Army's contingency corps or a revised Stryker brigade combat team (SBCT) configuration, which incorporates an armor or mechanized task force, is open to further analysis. Bottom line, we cannot send lightly armored vehicles into high threat environments when decisive victory is assured with our current or upgraded combat systems.

Issue: Force protection.

Discussion: Security was lacking for critical command and control (C²) nodes such as the assault CP, TAC, and TOC as well as for critical staff personnel. Security for the ACP was augmented with a M2 section that greatly enhanced the capability for the commander to move about on the battlefield. However, the TAC and TOC traveled mostly with Avengers as security. While using the Avengers as security for this operation worked, relying on Avengers for this role should not be the fix. With an asymmetrical threat, our C² nodes were vulnerable many times to enemy attack. This operation required our C² nodes to operate at greater distances than doctrinally accepted. The C² nodes were sometimes away from a "rapid reaction" force to provide security should the need arise. The same concerns arose when critical staff moved about the battlefield. The only way to augment security would be to take combat power, critical to their mission requirements, from the TFs.

Recommendation: Change MTOE to allocate M2s for all C² nodes (ACP, TAC, TOC) and add M1114s to MTOE to outfit critical staff.

Issue: Combat identification

Discussion: From the beacon lights utilized during limited visibility to the TF guidons flown from the antennas of vehicles, combat identification proved instrumental in the success of the mission. The numbering system used by the brigade combat team allowed for quick identification. We must train with this system at home station. Beacon lights are a major plus for all units executing limited visibility operations. The ability to identify at 4 km (+) was a combat multiplier. More work needs to be done for our soft vehicles (high mobility multipurpose wheeled vehicles (HMMWVs), heavy expanded mobility tactical trucks (HEMMTs), fuelers)

Recommendation: Use these systems at home station. Force the combat identification panels to be mounted and used, as well as accounted for. Outfit each vehicle with the combat identification panels (CIP), as well as thermal blankets for limited visibility operations. All of these items must be a vehicle basic issue item (BII) so the crew or driver accounts for them. Beacon lights must be issued and utilized as well. The units' identification numbers must be implemented at home station. Roman numerals work for individual units, but the numbers for each task force was a great help in maneuvering in and around other units.

Issue: Task force movement difficulties

Discussion: Movement of the task force over extended distances proved to be one of the most difficult operations performed. The mix of tracked combat vehicles with wheeled cargo support vehicles caused repeated breaks in contact. The 1960's era 5 ton and 2.5 ton vehicles are not suited to the terrain, especially when loaded down with the additional weight of cargo trailers and water buffalos. Movement of the combat and field trains was also hindered by the lack of FM communications in many of the vehicles. This forced the task force to either travel at 5-10 kph or create a break in contact between the maneuver companies and the combat and field trains. This break forced the TF to pause in the offense to allow the logistical elements to catch up with necessary fuel, ammunition, Class I, etc.

Recommendation: Improve cargo fleet maneuverability and reliability in the desert and over extended distances, and ensure all cargo vehicles are equipped with a ring mounted weapon system to enhance security of the trains when separated from maneuver units. Increase number of radios in support vehicles.

Issue: M2 Bradley pros and cons in the urban environment.

Discussion: The M2 is well suited to the urban environment. Its size allows it to be easily maneuvered in built-up areas and the elevation, deflection, and barrel length allow it to engage and suppress vehicles and buildings up close. Over the 800 plus km traveled, the chassis proved very reliable, with the most significant issues coming from the turret drive and integrated sight unit (ISU). A disadvantage was the lack of external load carrying capability. The Bradley Fighting Vehicle (BFV) can carry 6 soldiers in the back with weapons and basic combat gear (body armor, ammunition, and weapons). The space on the inside of the vehicle runs out quickly with the addition of items such as the joint service lightweight integrated suit technology (JSLIST) and additional ammunition. Viewing outside the vehicle while buttoned up could also be improved with better optics or a camera to increase situational awareness and accuracy of firing port weapons. The addition of a turret weapon for the Bradley commander (BC) would also increase local security by allowing a 360-degree close in direct fire capability. This becomes extremely important in the urban environment. On two occasions, the armor

was penetrated by a rocket propelled grenade (RPG), and on one occasion ammunition stored in the bussel rack was struck by an RPG.

Recommendation: Continue to improve the BFV as an urban combat platform by developing lightweight reactive armor, reconfiguring bussel rack for protection of ammunition, and providing the BC with a turret machine gun.

Issue: Destruction of enemy equipment

Discussion: Destruction of enemy equipment and munitions must be undertaken with extreme care. Secondary explosions may be extremely large and may occur hours after igniting the equipment.

Recommendation: Soldiers must use the minimum destructive power required. Typically, the safest techniques to disable the equipment mechanically are to run it over, cut fan belts, and puncture radiators. Under no circumstances should non-engineer/explosive ordinance detachment (EOD) soldiers attempt to detonate ammunition or large munitions (rockets, missiles, caches, etc.). These items must be reported using a 10-digit grid for EOD disposal.

Issue: Force modernization starts with individual equipment items.

Discussion: We have only 25% PVS7B the rest are PVS7A. The 7As are better than the naked eye but only slightly. When expected to fight as the lead element in an Army, soldiers should have the most up-to-date essential equipment.

The FBCB² “magic box” was one of the most valuable items that we used during this war. It creates a common understanding instantly and shows you in relation to your brother. Many times I was able to visualize a FRAGO as it was being given.

The 120mm antipersonnel round is in the army somewhere. It would have been very helpful in Karbala and Al Kifl. Those are the kind of battles tanks will be fighting in the future. We used the multipurpose antitank round (MPAT) in air mode to do the same thing but it would be more effective if it did not rubble everything around it. We could have fought this war with only the MPAT though.

Bustle rack extensions were needed. In the urban fight, you have to be able to see over the rear of the tank using the vision blocks.

Remote CVCs would have helped as tank commanders were often dismounted.

Built in friend or foe identification that doesn't require dismounting to change the batteries. The Phoenix lights probably were the most valuable tools that we employed at the individual vehicle level. There needs to be a permanently mounted system that can be turned on or off from the turret.

Recommendation: Fund new PVS14s, field FBCB² on leader tanks, generate interest in the 120mm anti-personnel round, fund bustle rack extensions, generate interest and support for remote CVCs, and figure out a way to hard mount the Phoenix lights.

Issue: Force protection for TCs and BCs.

Discussion: The missions conducted during this operation forced units to operate in urban areas and areas where visibility was limited. TCs and BCs did not have effective situational awareness from their hatch. Most BCs and TCs rode at name tape defilade (or lower) but most, if not all, were exposed from the top of the turret. This positioning was the only way for the leaders to have full situational awareness.

Recommendation: Outfit the commander's side of the BFV and M1 with a cupola that provides protection from the front and sides and allows the leader to have situational awareness. A cupola that provides 8-10 inches of protection will prevent the leader from trying to squeeze back in to the turret at a time when direct fire is being placed on his vehicle.

Issue: The MK-19 40mm machine gun repeatedly proved itself as the decisive weapon while in contact

Discussion: In every contact, the MK-19 distinguished itself as the premier killing system throughout the engagement. Its ability to simultaneously and overwhelmingly both suppress and destroy enemy positions saved the lives of countless U.S. soldiers. The wing man concept of precision M2 cal .50 machine gun fire in tandem with the MK-19 quickly overwhelmed any dismounted or lightly armored enemy force. The MK-19 is a magnificent weapon in combat, despite the shortcomings in training ammunition and its unfamiliarity to many soldiers.

Recommendation: Continue to use the MK-19 and manufacture greater numbers in the Army inventory. This will allow gunners to become more proficient and result in fewer shortages during times of war.

Issue: Mounted urban assault

Discussion: Mounted assaults in a urban area can be executed to gather information on the enemy situation, clear or seize terrain, and destroy enemy forces along a route. Units must have a plan for downed vehicles that allows speedy recovery, as time is usually critical. The BCT also discovered the necessity of close- in small arms fire from TCs hatches or the back of M113s, using personal weapons, to assist in destroying enemy forces close to the road and on overpasses. Finally, employ psychological operations (PSYOPs) assets to warn away civilians who may wander into the crossfire.

Recommendation: Heavy units should incorporate combined arms urban assault techniques in home station training.

Issue: How tankers train-closed hatches, roads, and driving backwards

Discussion: In training, no tanker likes to stay buttoned-up or open protected. Additionally, no tanker likes to stay on the road. The training mentality is that we cannot see anything with our hatches closed and the enemy will destroy us easily on the roads. However, most fights were on roads, highways, and bridges.

Recommendation: Despite the advantage that the OPFOR gains and already has at a training center, I recommend that all commanders force their units to fight at least one battle open-protected at a CTC. It is critical to also practice formations and fighting on roads. Driving backwards with hull orientation to the enemy is another necessary skill.

My company did this numerous times in urban environments to the poor back deck clearance of the main gun.

Chapter 11 Battle Staff Planning

Chapter Contents

Introduction/Lessons Learned

Topic A - Forming the Team

Topic B - Parallel Planning

Topic C - Automation Challenges in Planning

Topic D - Location of the Battle Staff during the Conflict

Topic E - Coordination, Rehearsals, and Liaison Officers (LNOs)

Introduction

The battle staff developed a base plan that was executed with little change from Kuwait to Baghdad. Key to the effectiveness of the battle staff was a solid team of planners that shared a common view of the enemy's center of gravity.

Lessons Learned

The incoming and outgoing battle staff should conduct a short overlap, where tactical standing operating procedures (TACSOPs) and standing operating procedures (SOPs) are reviewed. The incoming battle staff should conduct an orders drill, walking through a complete military decision-making process (MDMP), to include briefings to the command group and the publication of an order.

After the initial mission analysis is complete and several courses of actions (COAs) have been developed, bringing in subordinate units and involving them in the process facilitates an open discussion of the capabilities of friendly and enemy units, timelines, and support requirements.

Develop a system patch to enable systems to talk with each other.

This battle staff planning cell should contain a maneuver planner, intelligence planner, logistics planner, and fires planner.

Include rehearsals of supporting actions in the close fight such as communications procedures, actions on contact, SOPs, and visual identification. Embedding special operating forces (SOF) liaison officers (LNOs) down to the lowest level is a tactic that should be sustained.

Chapter 11 Battle Staff Planning Topic A - Forming the Team

Issue: Developing the team that comprises the battle staff.

Discussion: The rapid integration of the battle staff into a coherent team that is capable of conducting a detailed analysis of a higher plan and producing a written operations order (OPORD) is essential to the long term effectiveness of the battle staff. Within weeks of graduating from the School of Advanced Military Studies (SAMS) and the Command and General Staff College (CGSC), the many members of the battle staff are thrown together and expected to perform at a high level of proficiency. The development of the team shortly after its formation in June or July each year is critical to its ability to rapidly adapt and adjust to the changing situation and to develop and facilitate the products needed to keep the command group informed during the decision-making process. Once the team is formed, the talents each battle staff member possesses will enable the leadership to maximize the capabilities of the battle staff.

Recommendation: The development of the battle staff into a functioning team needs to be a priority in early summer and is critical to their success later in the year. Incoming and outgoing battle staff should overlap and review TACSOPs and SOPs. The incoming battle staff should conduct an orders drill of the MDMP to include briefings to the command group and the publication of an order. This exercise should be conducted in a time-constrained situation in order to cause the battle staff to bond quickly. This exercise could easily be taken from past "Warfighters" and recycled in order to meet the training requirements.

Chapter 11

Battle Staff Planning

Topic B - Parallel Planning

Issue: Parallel planning

Discussion: Early in July, 2002, Third Infantry Division (Mechanized) (3ID [M]) was brought into the planning circle to assist V Corps in the refinement of the 1003 operations plan (OPLAN). This was primarily done because 3ID (M) already had a BCT size force in theater due to their participation in a CONUS contingency response force (CCRF) mission in Kuwait. The division's participation in the planning cycle continued after it was attached to 1st Marine Expeditionary Force (MEF) for planning the initial phases of the war. The Army's MDMP process does not dictate the involvement of subordinate units until the process is almost complete, but as planning progressed 3ID (M)'s participation in the process became crucial. Unlike the Army's MDMP process, the Marine Corps' process involves subordinate units from the start of the planning, thus reducing the number of changes to the plan and requests for information (RFIs) submitted from the divisions to the corps headquarters. Early involvement of subordinate headquarters allowed significantly more staff and commanders the ability to conduct a detailed analysis of the situation, allowing for greater flexibility during the numerous iterations of the plan. The parallel planning conducted by 3ID (M) enabled the entire V Corps to completely switch their plan, from one initially relying on 5+ divisions for LD to one relying solely on the 3ID (M). After V Corps produced and issued their original VICTORY COBRA plan during VICTORY FOCUS at Grafenwoher, Germany, 3ID (M) planners quickly realized that the plan was not feasible since most units would not be available on the proposed mid-March line of departure (LD) date.

They reworked the division plan. This revised plan relied on maneuver in the open desert, avoiding urban areas originally given to the division and provided less time for corps shaping operations and fewer forces for securing lines of communication (LOCs) through the desert. 3ID (M)'s ability to rapidly reshape the division and corps campaign plan was directly due to the fact that they were involved in the plan and had already performed a detailed analysis of the terrain, enemy, logistical needs, and the time and space factors that would impact on the division. Within 24 hours of the original V Corps order being issued, Lieutenant General (LTG) Wallace directed his staff to "adopt the 3ID (M) plan and resource it." A division staff that had not been involved during the planning process probably would have failed to see how the parameters of the conflict had changed and how the plan needed to change to support them.

Getting subordinate commanders within the division to buy into the plan was also an essential part of the planning process. Subordinate commanders were included early on in order to get their perspective on the potential conflict. This early involvement in the process enabled a greater degree of flexibility by the commanders during the conflict.

Recommendation: Initial mission analysis must to be performed by the staff before all subordinate units are included to ensure that the scope of the problem is clearly defined. After the initial mission analysis is complete and several COAs have been developed, including subordinate units facilitates an open discussion of the capabilities of friendly and enemy units, timelines, and support requirements.

Chapter 11

Battle Staff Planning

Topic C - Automation Challenges in Planning

Issue: Automation within the main command post (CP)

Discussion: Currently 3ID (M) uses maneuver control station light (MCS-L), Force XXI battle command brigade and below (FBCB²), command and control personal computers (C²PC), FALCON VIEW, Automated Deep Operations Coordination System (ADOCS), and Advanced Field Artillery Tactical Data System (AFATDS) in order to develop division graphics and a common operating picture (COP). All of these systems perform one function for the command post but are unable to talk to other systems. As of right now, V Corps and other units use C²PC as their common operating system but this system is currently not able to run in conjunction with our graphics plotter, causing 3ID (M) to continue its use of MCS-L to produce graphics for maps. None of these systems can download the graphics from either MCS or C²PC, requiring additional operators to expend large amounts of time to upload graphics in these systems in order to be used for the COP.

Recommendation: Develop a system patch in order enable systems to talk with each other. Also, recommend reducing the number of systems used in the headquarters. MCS-L could be eliminated if a program or system patch was produced to enable C²PC to work with a graphics plotter. FBCB² is a great blue force tracking system but at this time graphics from other systems cannot be imported. Too much time is spent re-inputting graphics into multiple systems.

Chapter 11

Battle Staff Planning

Topic D - Location of the Battle Staff during the Conflict

Issue: Location of the battle staff during the conflict

Discussion: With the addition of the assault command post (ACP) and the commanding general fighting the entire war from that command post, the relevance of the division main command post (DMAIN) was reduced. Since the division was not conducting deep operations in conjunction with the air tasking order (ATO) cycle, there was little planning for deep operations. The planners, responsible for writing the plan and thinking through the division decision points and the conditions set for the decision points, were unable to communicate to the G3/commanding general (CG) any impacts to the plan based on conditions earlier envisioned. Having a section of planners forward that were familiar with the numerous branches and sequels that are likely to evolve from any operations order (OPORD) may provide support and information concerning decisions made by the CG/Assistant Division Commander (Maneuver) (ADC-M)/G3.

Recommendation: By the start of the conflict, the ACP/division tactical command post (DTAC) had already grown in size; however, having a small planning cell forward to support future operations may have been useful. The battle staff-planning cell should contain a maneuver planner, intelligence planner, logistics planner, and fires planner. During any pauses in the operation, this group would be forward to receive guidance from the G3/CG in order to plan future operations. As a result of having the entire battle staff in the DMAIN, the planners were supporting the current operations fight, unable to look at deep.

Issue: Planning in the close fight.

Discussion: For the continuous offensive operations of OIF, the G3 directed that one G3 planner be forward as part of the DTAC. Tasks assigned to the planner were primarily to write and distribute fragmentary orders (FRAGOs) for the G3 current operations section. The majority of planning that occurred in the ACP/DTAC was done by the G3, CG, and ADC (M). The supporting arms were not included in the limited planning that occurred to ensure that a more thoroughly resourced and synchronized plan was developed for short notice branches. Supporting arms personnel were often asked for input and status during the current fight, but not for branch/sequel planning. An example was the plan to put the division cavalry squadron on the east side of the river and isolate An Najaf. The maneuver portion of that plan was excellent, but little or no thought was given to the logistics of the plan. This was a gross oversight given the fight the cavalry and 3rd BCT had prior to that in As Samawah, the logistics challenges the division was facing, and the tenacious fighting already faced by 2nd BCT in the area. A more detail analysis should have been done to determine a solution to logistics issues such as Class III and V resupply and casualty evacuation (CASEVAC).

Recommendation: DTAC needs to develop an SOP or take extracts from the 3ID (M) commander's handbook to assist in planning in a time-constrained environment. The SOP needs to include the method the DTAC wants to use to accomplish the task and who the key players will be. The following sections should include at a minimum: G3 operations (OPs) battle major, G6, G2, division engineer (DIV ENG), DIVARTY, logistics representative, and any others by necessity. In future offensive operations over the distances traveled in OIF, thought should be given to positioning a cell of the battle staff

forward to facilitate planning and dissemination of any changes if briefings are necessary.

Chapter 11
Battle Staff Planning
Topic E - Coordination, Rehearsals and Liaison Officer (LNOs)

Issue: Coordination, rehearsals, and exchanging of LNOs

Discussion: During the planning phase for OIF, special operations forces (SOF) and other government agencies (OGA) regularly came to conduct coordination and share information with 3ID (M) planners. This close coordination worked very well during the planning phase and the division reaped the benefits of the coordination. Also, 3-7 CAV and 3rd BCT conducted a few link up rehearsals with special forces (SF) teams upon completion of their isolation period. A special forces liaison element (SFLE) was integrated just prior to combat operations. This integration was critical to the success of different 3ID (M) units during several battles. SOF and OGA worked closely with 3rd BCT at An Nasariyah, 3-7 CAV and 3rd BCT in As Samawah, and OGA provided good intelligence for targeting enemy forces in Karbala. Without the SFLE, fratricide could have been a major problem during those battles. However, no rehearsals or coordination was conducted that focused on how the SOF elements would assist during the close fight. No direct coordination was done with the SOF elements operating around Karbala or those that were going to work in and around Baghdad. The lack of coordination with SOF elements working in and around Baghdad prior to execution caused some unnecessary friction that hindered transitions and reduced synergy.

Recommendation: Conduct coordination with all necessary SOF elements prior to execution. Include rehearsals of supporting actions in the close fight such as communications procedures, actions on contact, SOPs, and visual identification. Embedding SOF LNOs down to the lowest level is a tactic to sustain. This tactic helped to reduce the friction during direct firefights. Integrating SOF into training at home station, when possible, can improve our level of expertise in the close fight. Integrating SOF for the first time while under fire may result in unnecessary consequences.

Chapter 12 Fire Support

Chapter Contents

Introduction / Lessons Learned

Topic A - Fire Support Planning

Topic B - Fire Support Coordination and Control Measures

Topic C - 3ID (M) Area of Operations Management

Topic D - Fire Support in Urban Environments

Topic E - Transition to Stability and Support Operations (SASO)

Topic F - Training and Resourcing Fire Support

Introduction

The success of the Third Infantry Division (Mechanized) (3ID[M]) in Operation IRAQI FREEDOM was largely due to its ability to mass joint fires on the battlefield. From the initial destruction of the border observation posts/intelligence, surveillance, and reconnaissance (ISR) mission to the silencing of enemy indirect fire systems and movement to Baghdad, field artillery, close air support (CAS), and air interdiction (AI), were instrumental in allowing the freedom of maneuver for the division. With the success of joint fires integration, the fire support battlefield operating system validated its role in the combined arms team. We developed new techniques from lessons learned and implemented them to ensure success on the battlefield. The fire support battlefield operation system (BOS) also identified some shortcomings in resourcing the fight, but adapted to ensure timely and accurate fires throughout the division.

Lessons Learned

- The division must have the capability to plan division level fires while in constant, rapid offensive operations.
- Coordination at all levels is required for the placement of restrictive measures and units within all battlespace.
- Movement of permissive measures requires thorough coordination with all elements, to include the movement of the fire support coordination lines (FSCL) based on the role of the maneuver advance.
- A division forward boundary (DFB) is necessary to further delineate the battlespace. Worthy of consideration is adding the battlefield coordination line (BCL) to Army fire support doctrine.
- Opening and closing CAS kill boxes requires more planning and coordination.

- The division must ensure new tactics, techniques, and procedures (TTPs) for deconflicting airspace during offensive operations are captured and trained.
- It is necessary to identify land suitable for field artillery units and establish position area hazards (PAHs)/position artillery areas (PAAs) so air coordination measures can be developed around them.
- Targetable data and reporting throughout the levels of command need continuous refinement and training.
- The Army must anticipate a rapid transition to stability and support operations (SASO) following high intensity conflicts and incorporate SASO into training scenarios in conjunction with high intensity training.
- The division must establish attack option criteria prior to hostilities and rehearse them with higher, adjacent, and subordinate units.
- Keep the judge advocate general (JAG) representative in the division tactical command post (DTAC) to advise and mitigate a changing enemy.
- We must consider the use of all munitions available to the maneuver commander.
- Division artillery needs more artillery assets to weight the main effort.
- The Army needs to develop and purchase communications platforms that meet requirements for voice and data communications, working over extremely long distances, while on the move.
- There is an immediate need in the field artillery community for optic and designator systems that are smaller and provide observation that exceeds maneuver optical systems.
- Urban environments required the need to increase the amounts of high explosive (HE) ammunition on the ammunition basic load (ABL). We must increase the unit basic load (UBL) for controlled supply rates (CSR) and required supply rates (RSR) for an urban environment.
- The Army needs to develop a suite of multiple launch rocket system (MLRS) munitions that will allow for greater employment on the battlefield.
- Logisticians must develop CSRs based on planned consumption rates and ensure proper transportation exists to get Class V resupply into the battle.
- The Army needs to develop standardized digital systems across the force.
- The Army needs to change manning requirements in the sections of division rear command post (DREAR) fire support element (FSE), target processing section (TPS), and 4th Brigade (BDE) FSE.
- Work with the contractors on the Army prepositioned stocks (APS) draw grid; allow units to bring vital vehicles even if “acceptable” substitutes are available in theater; and use a robust division advanced party to validate the APS grid before home station vehicles are shipped.

Chapter 12

Fire Support

Topic A - Fire Support Planning

Issue: Air interdiction nomination

Discussion: The AI nominations process worked well throughout this operation. Unlike the locked in rigid “Warfighter” scenario, the division level had more flexibility in the nominations to V Corps. The normal targeting process based on 24, 48, 72, 96-hour target refinement, nomination, and submission were not conducive based on movement and displacement of the DTAC and DMAIN. Using the Automated Deep Operations Coordination System (ADOCS) Excel spreadsheets and email, and with the assistance of our fire and effects coordination cell (FECC) liaison officer (LNO) at V Corps, we transmitted our nominations. The division scheme of maneuver and command and control movement plan and strategy did not facilitate or accommodate our normal targeting process and cycle. However, we knew and rehearsed how we would submit our target nomination to V Corps. Our basic philosophy and methodology was to submit our AI nominations to the division’s FECC LNO at the corps main (CMAIN) FECC at least four days out. The LNO provided our AI nominations to the V Corps joint warfare officer (JWO) for four ATO cycles with the understanding that both the DMAIN and DTAC would be moving at LD and for at least 36 hours would be without sustained communications connectivity and the ability to conduct its formal targeting process. The LNO, along with the field artillery intelligence officer (FAIO) working at the deployable intelligence support element (DISE), helped update and refine the division’s AI nominations. The integration of the DISE into the normal targeting process was essential, especially during the first 48-hours of combat. This process and technique was invaluable and paid major dividends in the defeat of the Iraqi 11th Infantry Division and the subsequent destruction of the Medina Division. From 19-24 March 2003, the FAIO and FECC LNO submitted the AI nominations for the division’s targeting team. The deputy fire support coordinator (DFSCoord) and the division targeting officer provided input via single channel tactical satellite (SC TACSAT) over the fires or command nets. On 25 March 2003, the targeting team resumed its normal AI submission process with one exception - we focused only 24-hours out. This was predicated on the uncertainty of V Corps shaping operations and the dynamic battlefield. We went through a period where V Corps said 3ID (M) AI nominations maintained the same focus as theirs, and that we should not nominate time sensitive targets (TST) that were being handled at the Coalition Forces Land Component Command (CFLCC) level. We explained our AI focus is based on our future operations, as well as those long-range enemy systems that affect our freedom of maneuver. V Corps also wanted us to identify surge period for close air support for each ATO cycle as well. Our basic philosophy for a pre-planned CAS request was based on our previous line of departure (LD) and attack times of the day.

Recommendation: Sustain the 24-hour targeting methodology and AI nomination and submission process used by the FECC LNO and FAIO working at the deployable DISE used during OIF. The division should take a hard look at the DTAC and DMAIN movement plan and strategy and the impact it has on targeting and shaping the division’s battlespace. Improve our long-range communications systems (i.e., SC TACSAT).

Issue: Target refinement while on the move

Discussion: During offensive operations units must have the capability to conduct target refinement. The DFSCoord and FAIO developed a concept and methodology to address target refinement issues and concerns while on the move. The integration of the DISE into the normal targeting process while the DMAIN was moving was essential, especially during the first 48-hours of combat. There were two methods of target refinement: 1) In the red/amber tactical operations center (TOC) configuration via ADOCS and TACSAT, ADOCS to refine and transmit received targets and TACSAT as an alternate route to transmit voice to units without digital capabilities, and 2) Physically moving (i.e., in a vehicle) pure TACSAT for all voice refinements. These methods worked well in the short term with an enemy force that could not reconstruct its command and control (C²) and re-mass its resources quickly enough to be effective. Develop techniques that tie ADOCS and the Automated Field Artillery Tactical Data System (AFATDS) into a system such as TACSAT for mission processing on the move in a vehicle. Communication became paramount throughout all phases of combat operations. We significantly improved our long-range communications systems by fielding the single channel tactical satellite (SC TACSAT) system at the DMAIN and DTAC on an interim basis. Without question, SC TACSAT was the lifeline of the communications architecture of the division.

Recommendation: Sustain the targeting methodology, process, and procedures for target refinement while on the move. The division should take a hard look at and sustain the long-range communications capability that existed during Operation IRAQI FREEDOM. Submitting SC TACSAT equipment changes to future modification tables of organization and equipment (MTOE).

Issue: Corps shaping versus combined air operations center (CAOC) air interdiction (AI) for deep shaping operations

Discussion: Lessons learned during OIF spurred a debate concerning deep shaping operations. One of the factors fueling this argument was the placement of the fire support coordination line (FSCL). Doctrinally, the FSCL is placed 30-40 km out, typically at the maximum range of the division's organic indirect assets. The combined forces air component command (CFACC), through the CAOC, shapes the battlefield long of the FSCL. However for OIF, the FSCL was placed approximately 140 km in front of the division. This created a dead space between the area that the division could influence and the area shaped by the CFACC. One factor that contributed to this problem was the fact that rather than another Army division, the 1st Marine Expeditionary Force (MEF) was on our northern flank. Doctrinally, the Marines keep their FSCL long of their front line trace because they have their own air wing to conduct their deep shaping. Conversely, the Army relies on the Air Force for shaping. The debate is now who should be responsible for shaping, the CAOC or the corps. Doctrinally, the CAOC takes care of the deep shaping for the division. The division and the corps nominate AI targets and send them up to the CAOC through the battlefield coordination detachment (BCD). The CAOC, with a dynamic targeting and planning cell, takes our AI nominations and develops them into viable targets. They have a host of ISR assets to accomplish this including: U-2, Predator, satellite imagery, signal intelligence (SIGINT), and the Joint Surveillance Target Attack Radar System (JSTARS). From target nomination to execution the process takes 72-96 hours. Once the ATO is published, fighter pilots and bomber crews, under CAOC control through the

Airborne Warning and Control System (AWACS), plan and execute the AI mission. Once the mission is complete, battle damage assessment (BDA) is analyzed and passed back down to the corps and then to the division. This process is battle proven and worked well in the past. However, CAOC kill box interdiction (KI) for OIF was unsuccessful. Contributing factors to failure were lengthy targeting processes against a mobile enemy, KI operations against a well-hidden threat, and a lack of battlefield situational awareness (SA).

The CAOC's lengthy targeting process contributed to its lack of success. By the time the analysis was done and the ATO was created, the targets had moved. There currently is no process to perform target updates to the CAOC. On one occasion, the CAOC engaged 200 empty revetments with no BDA. A well-hidden enemy was another issue that caused problems for the CAOC. The enemy used camouflage, hid in orchards, and hid in urban areas making it challenging to find. The CAOC had such a large area that they could not focus their search. Without complete situational awareness, elements with platforms that can destroy deep targets possess the capability of fratricide.

The corps air support operations center (ASOC) took a different approach to the shaping short of the FSCL. Corps' process was refined to allow for dynamic retasking when a target moved or changed the degree of protection. The corps air control element (ACE) processed possible targets in a more timely way, using their internal available ISR platforms. Additionally, they observe the same ISR feeds that the CAOC sees. Through the use of Hunter unmanned aerial vehicles (UAV)- Short Range, the corps used real time intelligence to find and engage targets. The ASOC's philosophy was to kill targets with CAS as they found them with the UAV. One concern behind this philosophy is that targeting may not be done in support of the commander's scheme of maneuver. On the other hand, we must realize that many of these CAS sorties would be going home without employing ordnance, resulting in wasted CAS sorties.

One last topic worthy of discussion is movement of the FSCL based on the air tasking order (ATO) cycle. This movement is based on targeting that is done by the CFACC at the CAOC for AI missions long of the FSCL. Essentially, the CFACC plans and engages those targets as AI. If the FSCL moves according to a maneuver trigger and not ATO cycle, there is a possibility that target sets planned as AI missions suddenly appear short of the FSCL. As a result CFACC missions take off with the intent to execute AI on targets that are now located within corps and division battlespace. A solution would be to allow the CFACC to do its deliberate targeting process. Once the targets make the ATO, the aircrews will launch with the intent to do an AI mission. Upon check-in with an airborne command and control platform (either AWACS or JSTARS), the aircrews will receive an AO update. If the AI target then falls short of the FSCL, those aircraft will be pushed to the corps or division to engage those targets in the form of CAS. If aircraft check-in and their target set has already been engaged and destroyed, those aircraft will be sent back to AWACS for retasking. For this concept to work, it is essential to have an airborne command and control platform that has total SA on the battlespace. Putting Army LNOs on board with access to Force XXI battle command command brigade and below (FBCB²) and communications capability to corps and division could be one solution.

Recommendation: We proved that our doctrine works when used. Defining the battlespace for all levels of command delineates where targeting is done. Corps focused on deep shaping of the battlespace in front of the division, which provided for a more timely and focused targeting process. Continue the development of corps clearance of targets through the division, as only the division truly maintains situational

awareness of its subordinate units. Maintain the process that allows ISR assets to be shared with division, for inclusion in the division's targeting process.

Issue: Doctrinal versus non-doctrinal terms "A" or "G" day

Discussion: No doctrinal definition clearly defines "A" or "G" day (when the 24 hour period starts or finishes) creating confusion in subordinate V Corps units.

V Corps uses a GES (graphic estimate sketch) to depict timing of critical events and executable tasks using the ATO cycle as a base. With this base, a "G" day, "A" day, and "D" day starts at 0300Z and ends 24 hours later. Note: "A" and "G" are not doctrinal terms and not found in any of our joint publications. At the same time, in all other products from V Corps, a "G" day is referred to as running from 2400 hours Zulu for a 24-hour period.

For example:

From the draft FRAGO V, upcoming Cobra II operations order:

3.C.1.I. NET D+3/A+1/G DAY 0100Z CONDUCT GROUND RECONNAISSANCE TO RECON LOA (40 KMS).

There can be two different interpretations of this: 1) According to the standard V Corps has established with the GES, 3ID (M) ground reconnaissance would be able to LD at the end of the A+1 day, G day would have been into its 22nd hour, and 2) Using the 2400 hr Zulu clock, LD would occur at the first hour of the G day, 22 hours prior to the first definition. The bottom line is that V Corps has not established a standard for "G day" and fluctuates from using the ATO cycle and the definition for a doctrinal day. This lack of clarity creates great confusion and can drastically affect the plan.

There are three possible recommendations to eliminate this confusion and provide for the efficient killing of our enemies and a legitimate chance for our soldiers to survive on the battlefield: 1) Use "D" as defined in JP 1-02 as the doctrinal base only for any discussion of days or hours, 2) Adopt the ATO cycle as the standard day, or 3) Clearly define each non-doctrinal day.

1. Adopt "D" as the standard:

From JP 1-02:

Times- (C-, D-, M-days end at 2400 hours Universal Time (zulu time) and are assumed to be 24 hours long for planning.) The Chairman of the Joint Chiefs of Staff normally coordinates the proposed date with the commanders of the appropriate unified and specified commands, as well as any L-hour will be established per plan, crisis, or theater of operations and will apply to both air and surface movements. Normally, L-hour will be established to allow C-day to be a 24-hour day.

a. C-day. The unnamed day on which a deployment operation commences or is to commence. The deployment may be movement of troops, cargo, weapon systems, or a combination of these elements using any or all types of transport. The letter "C" will be the only one used to denote the above. The highest command or headquarters responsible for

coordinating the planning will specify the exact meaning of C-day within the aforementioned definition. The command or headquarters directly responsible for the execution of the operation, if other than the one coordinating the planning, will do so in light of the meaning specified by the highest command or headquarters coordinating the planning.

b. D-day. The unnamed day on which a particular operation commences or is to commence.

c. F-hour. The effective time of announcement by the Secretary of Defense to the Military Departments of a decision to mobilize Reserve units.

d. H-hour. The specific hour on D-day at which a particular operation commences.

e. L-hour. The specific hour on C-day at which a deployment operation commences or is to commence.

f. M-day. The term used to designate the unnamed day on which full mobilization commences or is due to commence.

g. N-day. The unnamed day an active duty unit is notified for deployment or redeployment.

h. R-day. Redeployment day. The day on which redeployment of major combat, combat support, and combat service support forces begins in an operation.

i. S-day. The day the President authorizes Selective Reserve call up (not more than 200,000).

From doctrine, a "D" day could be easily used to describe all actions. This is in line with the majority of Army personnel's understanding of what a day looks like, not to mention the rest of the world. "A" and "G" would no longer be used.

2. Adopt the ATO Cycle as the standard day. The ATO cycle starts at 0300 Zulu and runs for 24 hours. The battle rhythm of the corps and division revolves around these parameters. There are two reasons 0300 Zulu is used: 1) It has always been that way, and 2) An Air Force TTP clearly delineates night and day operations. An "A" day spans the ATO cycle day. This is an Air Force TTP, which corps has adopted, but has yet to clearly define for V Corps operations. Adopting this as a standard day would not only change how we view days on the ground, but would also cause confusion in the days of the month. The 17th of March would now start at 0300 Zulu, adding to confusion.

3. Clearly define each non-doctrinal day. An "A" day runs from 0300 Zulu for 24 hours and a "G" day runs from 2400 Zulu for 24 hours. Of course, these definitions are not corps, since they view "G" as either starting at 2400 Zulu and sometimes as starting at 0300 Zulu. The draw back to accepting this recommendation is that portions of A+1 and A+2 would occur during G-day, creating confusion.

Recommendation: Use joint doctrine that clearly defines a "D" day. To adopt ill defined terms, such as "A" or "G" would require these days to follow the 2400 hrs Zulu start of the day for a 24 hour period. The Army is comfortable with "G" and it mirrors our

already established standard for a day (except for V Corps use in the GES). "A" day must not be used as a base, until the CFACC can move it into the parameters of joint doctrine. The ATO cycle must line up with a standard "joint day" or soldiers' lives may unnecessarily be put into danger by the added confusion.

Chapter 12

Fire Support

Topic B - Fire Support Coordination and Control Measures

Issue: During Operation IRAQI FREEDOM, V Corps employed a new concept, called corps "CAS," using allocated CFACC fixed wing assets to strike targets within 3ID (M)'s zone, short of the FSCL. This concept created an imaginary line approximately 30 km in front of the forward line of own troops (FLOT) that was established to delineate between divisional CAS responsibility and corps use of fixed wing aviation to engage targets. Never was the definition and parameters of this concept clearly defined or written out (no deeper than a PowerPoint slide). Corps continually engaged targets short of the FSCL in 3ID (M)'s zone without requesting kill boxes be opened. Deconfliction of divisional and corps CAS was often not conducted. Battle damage assessment (BDA) from the effects desired by air surveillance radar (ASR) were never received when corps conducted the missions, nor were positive clearance of fires conducted. The placement of the FSCL was so far in front of the forward edge of the battlefield (FEBA) that neither divisional nor corps assets could effectively manage the battlespace. (On D+10 corps attempted to implement the division forward boundary (DFB) concept that was being pushed by the 3ID (M) FSE.) Link this with the limited ability of corps to conduct target development within their battlespace, and the inefficient use of CFACC assets becomes apparent. A battlespace discussion follows.

Discussion: Ideally 3ID (M) would recommend placement of the FSCL close enough to the FEBA so that organic indirect fires would be able to range most targets short of the FSCL, but because the FSCL is nominated to CFLCC through V Corps, it is usually placed 100 km or more beyond the FEBA. Although 3ID (M) was able to nominate its preferred location of the FSCL, our nomination was rarely accepted by V Corps/CFLCC because the preponderance of V Corps forces (11AHR, 41st FAB, 214th FAB) have organic fire support systems (Army Tactical Missile System [ATACMS] Block 1/1A, Apache helicopters) that can easily range beyond our nominated location. 3ID (M) was generally directed to use an FSCL that could be as far as 100 km beyond the range of standard munitions from our M109A6s and M270s. The question quickly became: "How do we target enemy forces located beyond the range of our organic artillery but short of the FSCL?" Air-delivered fires were the obvious answer; but what was less clear was what type of missions they would be performing and how they would be controlled?

Joint Publication 3.09-3, JTTP for Close Air Support (CAS), defines CAS as:

"air action by fixed wing and rotary wing aircraft against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces."

Doctrinally, however, air interdiction (AI) missions may also be flown short of the FSCL. For example, **Joint Publication JP 3-60, Joint Doctrine for Targeting**, defines AI as:

“air operations conducted to destroy, neutralize, or delay the enemy’s military potential before it can be brought to bear effectively against friendly forces at such a distance from friendly forces that detailed integration of each air missions with the fire and movement of friendly forces is not required.”

The key phrases that differentiate between CAS and AI are “close proximity” and “detailed integration.” So who decides what is CAS and what is AI? In all cases the ground commander makes the decision. The commander of the supported ground unit requests and approves all air missions within his area of responsibility. Likewise, the doctrinal requirement for coordination of AI missions short of the FSCL resides equally among the CFACC and the ground commander, but the determination of the level of coordination required rests solely with the friendly force ground commander and his fire support element. Once the ground force commander determines that the identified hostile target is not in “close proximity” to his friendly forces, and that fires or effects of those fires will not impact the fire and maneuver of his forces, he can determine that hostile target to be AI.

JP 3-09 states:

“Forces attacking targets beyond an FSCL must inform all affected commanders in sufficient time to allow necessary reaction to avoid fratricide, both in the air and on the ground. In exceptional circumstances, the inability to conduct this coordination will not preclude the attack of targets beyond the FSCL. However, failure to do so may increase the risk of fratricide and waste limited resources.”

This means that the CFACC or another component commander may attack targets beyond the FSCL in 3ID (M)'s zone. He is required to inform 3ID (M) prior to conducting operations. If he is unable to do so due to exceptional circumstances, he can attack targets without coordination. 3ID (M) interprets this to mean that if enemy units that fall beyond the FSCL within our zone are attacking his forces, and he is unable to contact us to deconflict, the CFACC is not precluded from attacking. This also means that if 3ID (M) units are receiving effective fires from beyond the FSCL, and they cannot communicate with higher headquarters to deconflict, they may return fire without permission. JP 3-09 goes on to say:

“The establishment does not create a “free-fire area” (FFA) beyond the FSCL. When targets are attacked beyond the FSCL, supporting elements’ attacks must not produce adverse effects on or to the rear of the line. Attacks beyond the FSCL must be consistent with the establishing commander’s priorities, timing, effects and deconflicted wherever possible with the supported headquarters.”

The division’s interpretation of the above is that the 3ID (M) commander has the right to say “no” to components that wish to strike targets in our zone beyond the FSCL, if their attacks produce adverse results or are not consistent with the V Corps or 3ID (M) commander’s priorities, timing, and desired effects. Additionally, the 3ID (M) commander must have time to coordinate these attacks with his own operations.

United States Central Command (USCENTCOM) kill box (KI)/CAS SOP defines kill box operations short of and beyond the FSCL:

“Reference kinetic effects, the following rules apply to closed vs. open killboxes, short and long of the FSCL.

(1) (U) CLOSED: Aircraft can only attack if under direct positive control (FAC.) Aircraft can fly through/over fly a closed Killbox.

(2) (U) OPEN: Aircraft can attack without direct positive control within an open Killbox.

(3) (U) INSIDE FSCL: Killboxes closed to air attack unless CFLCC opens it through Air Support Operations Center or Direct Air Support Center.

(4) (U) OUTSIDE FSCL: Killboxes open for air attack unless CFLCC closes it through AOC Director of Combat Operations."

V Corps is in violation of doctrinal use of air in terms of defining CAS, clearance of fires, and killbox interdiction operations. During Operation IRAQI FREEDOM, joint targeting operations in the V Corps area of responsibility were extremely restrictive. In the future, this process must become permissive to facilitate responsive, effective fires. The U.S. Army must redefine the battlespace based on our ability to influence it.

Recommendation: 1) Doctrinally place the FSCL, 2) Adopt the battlefield coordination line (BCL) concept that is utilized by the Marine Corps, or 3) Establish a division forward boundary (DFB) to facilitate permissive engagement of enemy forces.

1. Doctrinally place the FSCL. Place the FSCL close enough to the FEBA so that organic indirect fires would be able to range most targets short of the FSCL. Targets beyond the FSCL could be engaged by the CFACC (AI) or by corps/division deep attack assets. The coordination for corps or division deep attacks would have to be coordinated regardless of the FSCL placement, so this is not an additional requirement. Placing the FSCL closer to V Corps maneuver allows the CFACC to adequately resource, conduct ISR, attack, and provide feedback based on ASRs. The argument seems to be that CFACC would not adequately address V Corps targeting requirements; 3ID (M) violently disagrees. CFACC is a component, manned and equipped to effectively manage this battlespace forward of the FSCL; V Corps is not and has demonstrated their inability to manage said battlespace. 3ID (M) believes CFACC is better prepared to engage targets to effectively shape the battlefield versus V Corps' use of corps CAS.

2. Adopt the battlefield coordination line as a corps FSCM. From 1st MEF Fire Support Coordination Playbook:

"Battlefield Coordination Line (BCL) – A supplementary fire support coordination measure, established based on METT-T, which facilitates the expeditious attack of surface targets of opportunity between the measure (the BCL) and the fire support coordination line (FSCL). When established, the primary purpose is to allow MAGTF aviation to attack surface targets without approval of a ground combat element commander in whose area the targets may be located. To facilitate air delivered fires and deconflict air and surface fires, an airspace coordination area (ACA) will always overlie the area between the BCL and the FSCL. Additionally, ground commanders may strike any targets beyond the BCL and short of the FSCL with artillery and/or rockets without coordination as long as those fires do not violate the established BCL ACA. This includes targets in an adjacent (OPCON) ground commander's zone which fall within the BCL-FSCL area."

The BCL is the most permissive measure available allowing for engagement of targets beyond corps CAS and divisional assets without violating the airspace control authority (ACA).

3. Create a division forward boundary. From FM 101-5-1:

“Forward boundary (Division Forward Boundary, DFB) - The farthest limit, in the direction of the enemy, of an organization’s responsibility. The organization is responsible for deep operations to that limit. The next higher headquarters is responsible for coordinating deep operations beyond that limit. In offensive operations, the forward boundary may move from phase line to phase line, depending on the battlefield situation.”

The DFB would clearly delineate corps and divisional battlespace and responsibilities of each. Beyond the DFB, it would be corps’ requirement to coordinate with CFACC and others (to include 3ID (M)). This measure would give corps the battlespace they desire for air assets at their disposal, and clearly define the limit for coordination with 3ID (M) when using air.

Bottomline: The BCL is clearly the most permissive measure, but also one that requires a thorough understanding of our doctrine and its use. U.S. Army Doctrine must be changed to incorporate the BCL as an FSCM.

Issue: Control of CFACC fixed kill boxes

Discussion: Prior to OIF, the combined forces air component commander (CFACC) developed a plan to incorporate pre-established kill boxes. During the operation it allowed for the rapid employment of aircraft, gave the aircraft a focused location to begin operations, and allowed for timely clearance of AI. One of the challenges we faced with the fixed kill box was that it did not allow for flexibility of rapid offensive operations. The division’s need to attack targets on the high payoff target list (HPTL) or high value targets (HVT) was minimized by having the Air Force destroy targets in the order they appeared on the battlefield instead of what the maneuver commander wanted destroyed. It is also imperative that all elements on the battlefield know and track when kill boxes are opened and closed.

Recommendations: Consistent with doctrine, we recommend the lowest level possible control the kill boxes. Make the approval authority for opening and closing kill boxes the ground maneuver commander who owns the battlespace. Ensure the Air Force understands the attack guidance established by the division.

Issue: Establishment of PAHs.

Discussion: Size, placement, and activation of position area hazards (PAHs) were a consistent issue when planning routes for air and maneuver forces. The 7x7 km area that V Corps mandated be used for planning limited the freedom of movement for other forces on the battlefield. The PAHs were always in effect, essentially making the MLRS position areas off limits for all other units. Additionally, dictating planned PAH areas diminishes a unit’s ability to respond to time sensitive targets while on the move. When the C²AP processes an AFOM (ATACMS family of munitions) fire mission it generates a position area hazard message. The message describes the aircraft danger area around the platoon selected to fire. Four grids on the ground and an altitude define the area.

This area is used to warn all flight operations and to gain clearance to fly through the airspace. If more than one platoon is required to fire the mission, separate messages are displayed for each platoon. It is munitions specific. It is only generated for those platoons the computer has listed as having the munitions. If a UFFE (unit to fire for effect) was specified in the fire mission message, that UFFE is used. If a UFFE was not specified, the computer provides the best solution based on available information. The operator can enter the XDIST value and an effective date-time group (DTG) indicating when the position area hazard is valid. The PAH may be passed to other organizations as a restricted operations zone (ROZ). A ROZ is a volume of space that the Air Force often uses to restrict airspace. The same four points and altitude define the ROZ.

According to this definition, the PAH is defined once the mission digitally goes to the unit to fire and has an effective date time group associated with it. This is in conflict with the guidance we were given for planning around PAHs. The PAH is only applicable for the platoon firing the mission, not the entire position area the battery or battalion may be in.

The PAH is a control measure that is generated by the digital fire control system once an ATACMS fire mission is sent down to the launcher(s) responsible for executing the mission. It is based on the ballistic solution for the missile and the position of the launchers assigned the mission. Once the fire control system derives the solution, it sends it back up digitally to higher headquarters, where the PAH can be viewed on the Advanced Field Artillery Tactical Data System (AFATDS). (Note: The PAH that AFATDS generates for any given mission is significantly smaller than the 7x7 km area corps mandated.) This control measure can then be used to clear airspace for the times the missions will be fired. The purpose of the PAH is to protect aviation assets from flying through the path the ATACMS munitions may take. This is what leads to the establishment of the ROZ. While the 7x7 km with a 60,000 ft ceiling ROZ was pre-established for the supposed ease of planning, this in reality only made it more difficult at executor level. Air routes had to be planned around the MLRS position areas, including FARPs being positioned far from the PAHs. The feedback given to corps resulted in the MLRS position areas being pushed out to the periphery of the division battlespace. This made planning around them somewhat better, but led to the equally important problem of security for MLRS units in outlying positions. MLRS units have few internal security assets – two hard HMMWVs with MK-19s and a few .50 cal – so the issue of providing direct fire security assets from another source is apparent.

In relation to survivability when planning ATACMS firing positions, FM 6-09.60 states:

The missile [ATACMS]... has off-axis launch capability to enhance crew/launcher survivability from enemy counterfire. Although a launcher firing missiles will be a higher priority enemy target, it may be less vulnerable to counterfire than it is when firing rockets. Both shorter times from initial launch to movement away from the firing point and randomly selected off-axis firings contribute to reducing vulnerability when shooting missiles.

There is no need for an operational area (OPAREA) of substantial size (doctrine calls for an average 3x3 km box), due in part to the fact that hide areas and multiple firing points for each launcher are not necessary inside that same area for ATACMS counterfire survivability. In addition, operating in bare, open terrain such as was the case in Iraq, it is difficult to find/create hide areas, and any open land may be used as a firing point. FM 6-09.60 addresses the issue of desert operations:

Lack of vegetation makes camouflage difficult. In all cases, the MLRS unit is visible to the ground observer...

With that said, it is feasible to plan a reasonable PAH around a small group of closely placed firing points, where only the launchers could occupy and fire from, leaving the remainder of the platoon or battery in a large, modified hide area a small distance away. The launchers to fire could move forward, occupy the firing points, shoot the ATACMS missions, and depart back to the other area. Probability of receiving counterfire is low due to the off-axis launch of the missiles to begin with, but survivability may be even further increased by an immediate move.

Recommendation: There are several recommendations that would help alleviate some of the issues we had with PAHs: 1) Continue to use pre-established areas, but make them smaller and turn them on and off depending on missions. 2) If using large, pre-established areas on the outskirts of divisional boundaries, provide additional security assets for MLRS protection. 3. Employ the PAHs as outlined in FM 6-09.60, using the AFATDS solution along with an effective date time group, making it possible to shoot ATACMS missions from anywhere, anytime on the battlefield.

1. If higher headquarters insists on making PAHs pre-determined areas, operate them in a way similar to Air Force kill boxes that are opened and closed and, therefore, do not restrict air operations for longer than necessary. A reasonably sized PAH could be placed closer to maneuver units and be "opened" shortly before a mission is fired (since most ATACMS missions are pre-planned for objectives such as SEAD) and "closed" once the mission is complete. Additionally, this could make it easier to keep MLRS tucked in behind the maneuver units for better security. A large 7x7 km OPAREA is not necessary to increase survivability. This technique would make it possible to plan potential areas along a route MLRS is most likely to take to support TST missions. The route could be segmented into separate PAHs, and each turned on in sequence as the unit passed through, then turned off as the unit left that area, making MLRS routes something akin to air corridors, but on a smaller scale. M270A1 or IPDS launchers would be able to receive a mission, stop along a route, and fire immediately (M270's might need to update survey depending on distance traveled since they do not have embedded Global Positioning Systems). By activating the required PAH (ROZ), the airspace will have already been cleared. This option would require detailed prior planning and continuous position updates, but would allow for entire units to rapidly move as one entity rather than "leap-frogging" from one pre-determined position to another, as is now required to support TST missions.

2. If pre-determined, continually active, large PAHs pushed to the edge of divisional boundaries is the preferred method of employment, then some security must be provided for the MLRS unit occupying that area. MLRS should, whenever possible, be positioned with, or behind, maneuver troops in a relatively secure area. FM 6-09.60 suggests security packages be attached as follows:

"Depending upon the situation, a company team size force, including air defense artillery, should be requested for the MLRS battalion... A combination of roving patrols throughout the position area and reaction forces may be appropriate."

To protect the firing capabilities of the MLRS unit, a habitual relationship between units with the required make-up of force protection assets should be established, or such a conglomeration should be made organic to the battalion. In Operation IRAQI FREEDOM, MLRS position areas were often to the far west flanks of maneuver and

direct support units, in unsecured areas, leaving them vulnerable to ambush and small unit attacks. Due to the lack of direct fire systems aside from very few crew-served weapons, MLRS is especially susceptible to these types of attacks. In addition, its identification as a high payoff target to the enemy further increases the likelihood of hostile targeting.

3. The best recommendation to increase the utility and flexibility of MLRS ATACMS fires in the battle, is to use the PAH as outlined in FM 6-09.60, according to previously established doctrine. When exercised as described, the PAH translates easily into a ROZ that temporarily restricts a small amount of airspace in order to complete an ATACMS mission. An ATACMS target is determined and sent to the unit to fire when it is identified with the method of control either “at my command” (AMC) or “time on target” (TOT). Once the AFATDS derives the solution, the PAH coordinates are sent higher with sufficient time to be cleared through the proper A²C² channels. In the case of a pre-planned mission (i.e., SEAD or prep fires) with the method of control TOT, the missions can be sent well in advance to allow for pre-coordinated PAHs. In the case of a TST when the method of control is AMC, once clearance is received, the command can be given to “fire.” Immediate, short-duration PAHs are the best answer to give MLRS units the freedom of movement needed on the battlefield to best provide responsive, accurate, safe fires, while maintaining a suitable level of force protection for themselves by being closer to maneuver units. While there may be an argument that clearing airspace for ATACMS adds more time to the overall process, in the case of pre-planned fires this is a moot point, and for TSTs the few seconds’ difference would be negligible. After the fire mission is complete, the PAH no longer applies, and the airspace is once again clear for air asset movement.

Chapter 12

Fire Support

Topic C - 3ID(M) Area of Operations Management

Issue: Defining the depth of the division’s area of operations (AO).

Discussion: FM 101-5-1 defines area of operations as “A geographical area, including the airspace above, usually defined by lateral, forward, and rear boundaries assigned to a commander, by a higher commander, in which he has responsibility and the authority to conduct military operations.” When there is a noncontiguous battlefield without clearly defined boundaries, mixing of combat forces and fratricide can occur. While the battlefield in Iraq had clearly defined lateral and, in most cases, rear boundaries, we did not have a limit of advance (LOA) until after the 9th day of combat operations and that turned into a division forward boundary (DFB) two days later.

The permissive nature of the fire support coordination lines (FSCL) should not serve as a hindrance to rapid ground operations. Its placement should be such that it creates battlespace in front of its subordinate units and is triggered to move based on the ground maneuver’s advancement or withdrawal. During this operation, the FSCL’s movement was based on the publishing of the current air tasking order (ATO). When the division traveled 350 km in 48 hours, the FSCL quickly appeared so close to our units that the division’s coordinated fire line (CFL) was twice beyond the FSCL. This could have easily resulted in fratricide to our forward units.

The division forward boundary should serve as a limit to which the division can influence with internal assets. Generally, the DFB was requested approximately 45-50 km in front of the division's lead element. This would allow internal ISR assets to acquire the enemy and conduct shaping operations against them prior to engagement by main body forces. Deep attack aviation, CAS, and rocket fires would provide shaping operations.

The delineation of the three areas of operation would allow CFLCC/CFACC to conduct deep shaping operations in the form of AI long of the FSCL; V Corps to conduct "corps CAS" between the FSCL and DFB, as well as send targetable intelligence to the division so that it could influence the next fight; and the division to have its own AO to conduct operations without constantly trying to keep higher headquarters out of the division's battlespace.

Recommendation: Headquarters at every level need to define the area of operations for subordinate units. Our doctrine provides us coordination measures to define our battlespace, where each element is able to influence the enemy with its inherent assets. This simple use of doctrine will clearly define who destroys the enemy where and will go a long way to mitigate fratricide of friendly forces. Targetable intelligence needs to be sent to the division main for inclusion in its targeting process. There will always be some time sensitive targets (TST) that require immediate engagement. In those instances, higher can control with detailed coordination with the maneuver commander that owns the ground. Division and brigade ETACs would be on the frequency for situational awareness and terminal control.

Chapter 12

Fire Support

Topic D - Fire Support in Urban Environments

Issue: Clearance of fires in urban areas

Discussion: The enemy in this fight used areas that he knew we would not strike with certain munitions based on our desire to limit collateral damage. Often, he would set his headquarters, artillery, rockets, and mortars in or beside schools, mosques, hospitals, and housing areas. While published rules of engagement (ROE) clearly defined the procedures to use, there were techniques developed to streamline the process making counterfire more responsive.

Clearance of fires for counterfire and selecting the best method of engagement was tedious at the start of the ground war. After we established the priorities for method of engagement and established triggers on when to use what system, we drastically reduced the time needed to destroy the enemy artillery systems. The process used for targeting or counterfire acquisitions sent to the DTAC was to plot both the weapons location and the impact location on the ADOCS, first against the "no strike list" and then with the 5 meter controlled image base (CIB). If the weapons' location was within 500 m of an item on the "no strike list" or in an urban area, we verified where the impact location was. If it was near or on troops, we conferred with the JAG representative in the DTAC as to the response to the acquisition. If there was a high likelihood of collateral damage, we processed the target with corps to gain approval to fire, generally with the use of precision-guided munitions. The response options we used were graduated based on availability. CAS with precision munitions was always the first

option, followed by dumb bombs from the Air Force and then cannons firing HE followed by DPICM with a converged sheaf. We would fire MLRS rockets as a last resort. As the war progressed, the CFO started to clear counterfire missions through the BCT that owned the land and cut DTAC out of the loop, shaving a few minutes off engagement times. Also, the DIVARTY FCE sent all fire missions to the MLRS units in an AMC status. That way, once the clearance process was complete, the command to the units was simply "fire." If the mission was denied, the FCE could end the mission with no harm done. This process saved at least 5 minutes per engagement.

Recommendation: Establish attack option criteria prior to hostilities and rehearse them. Improve the CIB imagery with the latest photomaps of the area of operations and continue to have a JAG representative in the DTAC. This process allowed us to mitigate some of the gray area when deciding whether to contact corps and when facing targeting from some intelligence assets. Sustain the fact that the CFO can contact a BCT and clear fires that are in that BCT's AO.

Issue: Indirect fires in MOUT

Discussion: During this operation, indirect fires helped to reduce enemy strong points in buildings that could not be taken out by direct fires alone. Even though direct fires were killing the enemy troops in the buildings, the enemy would often reseed those buildings. Therefore, indirect fires and the destruction of those buildings was the only way to eliminate the threat. Without the use of indirect fires to destroy enemy occupied buildings, task forces would not have been able to secure their objectives without a much higher casualty rate. The tight confines of military operations on urban terrain (MOUT) make the converged sheaf more effective by concentrating all of the rounds on the desired troop concentration between buildings or on the target building, if that is the target. Mortars were especially excellent in MOUT because of their high angle fire, which enabled them to get rounds between and on top of buildings very effectively. Danger close fires were also highly effective and necessary in MOUT. Because of the tight area in MOUT and low visibility, observers often could not see any farther than 1000 meters. Because other buildings in close proximity to the target area would absorb a lot of shrapnel and debris, it was safer to walk rounds in extremely close to troops. During the battles the observers often started their danger close missions at 400-600 meters in front of friendly troops and walked the rounds in to within 200 meters of friendly troops in order to totally destroy some of the sprawling building complexes occupied by hostile forces. This was executed safely by keeping troops buttoned up, situationally aware of "shot" on the mission, and by the nearby buildings absorbing the effects of the blast. The night prior to the battle, the maneuver company commanders were briefed on the procedures for danger close missions during the battalion FRAGO. This briefing paid dividends the next day. At home station, the construction of bunkers or firing buttoned up at the OP, can train teams on danger close missions. This training would help to instill the confidence in the guns that forward observers must have to execute danger close missions in support of their maneuver task force. The mortars high angle fires were extremely effective in MOUT, although low angle fires were used for artillery missions. Low angle fires were effective because the buildings in Baghdad are generally not that high. If high angle fire for artillery had been used as the standard, it may have made some of the artillery missions more effective; however, responsiveness would have decreased. The tradeoff was acceptable as many missions were danger close where speed in delivery was more beneficial to friendly forces. The standard sheaf for artillery is the BCS special. Early in the fight the special instruction "converged sheaf" was not included in the call for fire. As a result, in some cases the mission would have to be repeated to achieve the desired effects. Halfway through the

battle, procedures were modified to include “converged sheaf” as a special instruction. This greatly reduced the number of missions that needed to be repeated.

Recommendation: Converged sheaf should become the standard in MOUT or always requested by the observer. Refresh all FSOs and commanders on the procedures for danger close missions prior to going into MOUT. The FSE should develop a close relationship with their task force mortars. During training in Kuwait prior to the war, task force FSOs assisted in all mortar dry training and helped develop new TTPs. One effective TTP in MOUT, developed through training with the mortars, was how to fire while lined up “ducks in a row” on a street. Firing in that configuration is not a way the mortars normally fire and it required them to figure out ways of placing their aiming poles and “slipping the scales” on their sights. All mechanized mortar sections for MOUT should practice these methods because this can easily become the way a mortar platoon needs to fire while operating along narrow city streets. Finally, danger close training in some form should be conducted at home station to better replicate the concept of “train as you fight.”

Issue: Non use of Copperhead, the cannon launched guided projectile (CLGP)

Discussion: During this operation the enemy occupied areas and structures that they believed would give them sanctuary because of our commitment to minimize collateral damage. The use of precision munitions by the Air Force (joint direct attack munition (JDAM), laser guided bomb (LGB) allowed us to engage the enemy who used this tactic. However, the use of Air Force precision munitions was not always available or timely. Copperhead could have been used as a “100 lb LGB” against buildings and structures that the enemy used. The challenges of the Copperhead (placement of firing units to minimize angle T, cloud height, visibility requirements, laser engagement probabilities, and prepping the round) are all planning considerations that are similar to employment of all laser-guided munitions. These employment considerations are manageable. The common misperception is that Copperhead is only employed against tanks.

Recommendation: Employ Copperhead as a laser-guided munition and not always as an antitank munition. Plan for the use of Copperhead against all hardened high payoff targets.

Chapter 12

Fire Support

Topic E - Transition to SASO

Issue: 3ID (M) DIVARTY’s transition from high intensity conflict to SASO

Discussion: As the division occupied Baghdad and the counterfire threat diminished, DIVARTY found itself quickly transitioning to stability and support operations. The rapid transition proved challenging for both DIVARTY and division, as units shifted focus to rebuilding Iraq’s infrastructure and stability.

Division tasked DIVARTY to become the force protection headquarters for Baghdad International Airport (BIA). The DIVARTY’s task organization included 1-39 FA (MLRS), 1-3 ADA, and 59th CHEM CO(-). DIVARTY immediately identified resources needed and manpower requirements against specified tasks. DIVARTY also began to take on

other non-standard missions such as securing sensitive site exploitation (SSE) locations.

DIVARTY immediately positioned forces utilizing a strong point perimeter defense. Due to a large and somewhat porous perimeter, DIVARTY decided to focus on major avenues of approach and terrain that would afford the enemy the best cover and concealment. 1-39 FA with its limited night vision capability was assigned the more static points, to include the main gate entrance. 1-3 ADA, with its M6 Linebackers, M2 Bradleys, and M1068 Avengers was assigned to defend the more compartmentalized terrain on the west side of the airfield to best utilize their armor and thermal sight capability. As time and assets were made available, DIVARTY began position improvement. Class IV pushes were conducted in coordination with the G4. Additional tasks included the mending of holes in the fences surrounding the runways. With assistance from the engineers, units also began to dig slit trenches, clear fields of fire and provide lighting to BIA CPs. Division also tasked DIVARTY to provide traffic control points to keep vehicles from driving across the active runway – a task normally handled by USAF security police.

DIVARTY identified an overarching need to reorganize their TOC to provide the best C² possible for the operation. Cells such as the FCE and TPS were of less importance and their personnel reassigned to other duties. The DIVARTY created a force protection cell and a S5/CMO cell to fulfill mission requirements.

Despite being unprepared for SASO operations initially, the DIVARTY transition from high intensity conflict to support and stability operations went smoothly.

Recommendations: Units should conduct SASO training at least twice a year. DIVARTY should create an “off the shelf” SASO SOP. From the outset, the main objective for 3ID (M) was seizure of Baghdad International Airport. The Air Force arrived undermanned for its mission of airfield security, which depleted our combat power to complete that mission. There should be joint planning dealing with security issues when services co-utilize terrain. This would clearly delineate security responsibilities between agencies tasked with this mission. Force protection supplies such as metal detectors, HESCO bastions, floodlights, etc., should be prepositioned in theater and flown in as soon as possible in order to assist units’ security preparation of the aerial ports of debarkation (APOD). Also, recommend identifying a S5 at DIVARTY level prior to departure. This would allow the S5 to prepare SOPs, confirm tasks, and organize all security apparatus prior to deployment.

Issue: The “no strike list” assisted in transitioning the brigade fire support element into an information operations element.

Discussion: The FSE began to anticipate the change of mission at the cessation of hostilities. The NSL became an asset in stability operations where it was a limitation in combat operations. We utilized the NSL to identify the high payoff targets in the brigade sector. It allowed the S2 to start the intelligence preparation of the battlefield (IPB) process, helped the S3 with terrain management, and allowed the FS/IO element to shape what type of information themes to disseminate.

Recommendation: Continue to develop new ADOCS focused TTPs.

Chapter 12

Fire Support

Topic F - Training and Resourcing Fire Support

Issue: The lack of reinforcing cannon artillery assets available forced the division to accept unnecessary risk by using direct support (DS) battalions in a reinforcing role, often leaving a BCT with no dedicated artillery support.

Discussion: 3ID (M) artillery deployed to theater with its habitual MTOE artillery assets (three DS Paladin battalions, one divisional MLRS battalion with five associated radars, and the DIVARTY headquarters). On the seventh day of the war, DIVARTY received one field artillery brigade (minus), consisting of a "lightened" brigade TOC, one M270A1 MLRS battalion, and one field artillery detachment with two Q37 radars, with the tactical mission of general support reinforcing and eventually, reinforcing.

Additional V Corps requirements for time sensitive targets and ATACMS firing capability further limited 3ID (M)'s ability to use reinforcing assets because 2-4 FA had to maintain six of its 18 launchers as ATACMS TST shooters. The lack of reinforcing assets, coupled with the noncontiguous nature and depth of the battlefield, caused 3ID (M) to assume risk by leaving a BCT without battalion level DS fires. These non-standard roles included assigning one Paladin battery DS to the division cavalry squadron and assigning one DS Paladin battalion (minus) as reinforcing to other DS battalions for a majority of the war. As a result, two battalions (1-9 FA, 1-10 FA) fought most of the fight with only two firing batteries.

The lack of an additional 155mm Paladin battalion limited our ability to weight the main effort with cannon fires. The ROE led maneuver commanders to opt for 155mm HE as the munition of choice. This limited the reinforcing options since the only available unit to provide fires was MLRS, which only fires dual purpose improved conventional munitions (DPICM). Specifically, 3d Brigade fought on a 100 km front with only one battery DS for most of the battle and 2nd Brigade (the division main effort in Baghdad) fought the entire war with only two firing batteries.

Another challenge was the late arrival of the reinforcing brigade. 3ID (M) coordinated and conducted corps level exercises with 17th FA BDE, only to have 214th FA BDE arrive for the actual operation. The brigade did not arrive in time to train with the unit in theater, limiting training opportunities on C² and mutually supported unit (MSU) operations. DIVARTY quickly established a battle drill for MSU C² between the two units during combat operations. Because 214th FAB did not receive a mission of reinforcing 3ID (M) until day seven of the conflict, there was no opportunity to train with 3ID (M) until execution.

Recommendation: Heavy division artilleries need at least one doctrinal FA brigade reinforcing them in a high intensity conflict. The minimum requirement should be one cannon battalion, one MLRS battalion, and one tactical acquisition detachment (TAD).

Issue: Communications systems throughout the fight challenged the fire support system's ability to provide responsive coordination at the division level.

Discussion: The fire support community's reliance on FM communications hampered our ability to command and control coordinated, massed fires. Throughout the operation, all four brigade combat teams, the divisional cavalry squadron, DIVARTY, or division main were never within FM communications range (20-25 km). At one point,

two of the BCTs were approximately 270 km apart. This hampered the DTAC FSE's ability to provide additional resources, maintain situational awareness, pass digital graphics and updates, and approve FSCMs. In the middle of February 2003, all elements listed above received single channel tactical satellite (SC TACSAT) radios with a 5-kHz bandwidth. After initiatives by our NCOs, the antennas were mounted to allow for non-doctrinal on-the-move voice communications with all elements. This gave us the ability to slowly pass voice communications when units needed additional resources and to pass information/data. It prevented us from passing digital communications and, based on the bandwidth, required a long time to pass information and the need to repeat transmissions routinely.

Recommendation: With the noncontiguous battlefield we encounter today and operational maneuver at the division level, the artillery community needs to invest in updated communications that allow for both responsive voice and data secure communications. Each division needs sufficient bandwidth allocation to allow for a division fires net (25 kHz) to control fires. The 25-kHz bandwidth will give each element the ability to talk with quick, precise communications that are required in the fire support community. Furthermore, we need to develop/purchase equipment that provides secure data communications on the move, over long distances. Without clear long-range data communications, we open ourselves to missing information and transposing coordinates for both fire missions and graphics. The recommendation is that every element in the fire support community receive updated voice and data communications. Division would only field the upgrades to those elements that would communicate on the division fires net: division and brigade level fire support elements and the division artillery.

Issue: FM communications limitations

Discussion: At the distances units operated during OIF, effective FM communications were limited. This affected not only FM communications with FSE/DIVARTY elements but also FM communications with rotary wing aircraft. SC TACSAT (along with Iridium phones) was many times the only means of communication. The drawbacks of this situation include: limited number of systems, expense, bandwidth of command versus fire support net, only C² aircraft with SC TACSAT capability, and no ATCCS systems compatible with SC TACSAT. The bandwidth alone drove a lot of FS conversations to the command net. At these distances, AFATDS on an FM backbone did not increase our capability. When on a mobile subscriber equipment (MSE) backbone, AFATDS works adequately while units are set. Once on the move or at short halts the effectiveness of the system is limited to who has FM digital communications. Reliance on stationary MSE networks is an unnecessary burden. ADOCS was a great planning tool and increased our capabilities to provide the commander quick feedback and receive updated positioning, FSCMs, and essential information (like the ATO). This system too, suffers from a reliance on a MSE backbone.

Recommendation: The current communications system needs a major overhaul. A common communications network that utilizes the capability of satellites for both voice and digital traffic, integrates AF/Navy/Marine communications, and is compatible with ATCCS systems (AFATDS/ ADOCS) is required.

Issue: Bradley fire support team vehicle (BFIST) performance during Operation IRAQI FREEDOM

Discussion: The M7 BFIST performed magnificently during Operation IRAQI FREEDOM. Every crew praised its speed, survivability, and communications ability. It allowed FIST teams to remain in the fight when only turreted armored vehicles were survivable and allowed to participate in operations due to the rocket propelled grenade (RPG) threat. The 25mm gun and M240C coax machine gun were utilized in a defensive mode, but in every case, crew proficiency (Table VIII) on these systems saved lives. Because FIST teams were able to remain side by side with maneuver elements throughout all operations, they called 697 DS missions across the division. Several limitations, namely the lack of a designation system and optics package, were the primary concerns regarding the BFIST performance. The BFIST does not have the mounted capability to laser designate. The only way for a FIST team to designate is to dismount and set up to a ground/vehicular laser locator designator (G/VLLD). This is not practical during offensive operations. The G/VLLD should be mounted on the TOW hammerhead and stabilized so FSOs can paint targets on the move, but also be removable in order to facilitate dismounted operations. BFIST sights can only see out to the maximum range of the Bradley weapon system (3 km). This hinders the ability to effectively call for fire because by the time it is acquired the company is in the direct firefight and maneuvering to destroy the enemy. Also, with newer systems such as long-range survey system (LRSS), the optics on the BFIST do not give the clarity of vision that other systems can, so even as an information gatherer, the BFIST is lacking in its ability to acquire targets at maximum range.

Recommendation: The fire support world needs to purchase smaller, lightweight, designator systems with power source commonality. Also, we need a designator that is part of the integrated sight unit (ISU) on the M7. Either a 25/50X forward-looking infrared (FLIR) should be added (as on the M1A2 SEP), or more cheaply, we could equip BFISTS with the Long Range Advanced Scout Surveillance System (LRAS³) that is stabilized for usage on the move.

Issue: Employment of close air support (CAS)

Discussion: During OIF, units from battalion to corps used CAS extensively. One of the few ways to control CAS was with the use of an enlisted terminal air controller (ETAC). The shortages of ETACs in the division enforces the idea that FIST can control CAS in both emergency and non-emergency situations while ETACs use indirect control through the FIST. The military is making the focus towards joint operations and we, as fire supporters, must present the FIST as a universal observer capable of employing all means of fire support.

Recommendation: Train and certify FIST teams to ensure they are capable of employing all means of fire support. Equip the FIST with smaller, lightweight, target marking and designating instruments. Equipping FBCB² with the capabilities of AFATDS could remedy the lack of long-distance communication. But this does not just apply to FISTs. More members of BDE/BN staff should be trained on CAS integration to provide redundancy if ETAC/ALO go down.

Issue: The need for a better laser designator system.

Discussion: The ground/vehicular laser, locator, designator (G/VLLD) and related system require more than half of the interior stowage of the M7. The noncontiguous battlefield did not allow for simply dismounting the G/VLLD because of exposure to enemy small arms fire. Therefore, fire support teams did not use the G/VLLD and

missed many opportunities to use a laser designator to mark targets for CAS. The fire support community also missed many opportunities to employ Copperhead. While fighting in the urban environment, fire support could have used the Copperhead as a “100 lb LGB” against buildings and bunkers when CAS was not available. The enemy’s use of high collateral damage areas in this conflict reinforces the need for precision artillery munitions.

Recommendation: The fire support world needs to purchase smaller, lightweight designator systems with power source commonality. We need a designator that is part of the integrated sight unit (ISU) on the M7. Additionally, more units on the battlefield (not just FISTs and COLTs) should be equipped with lasing/target designation devices. Each mechanized/armor company should deploy to combat with several portable designators spread throughout its formation. That way, the lead platoon (or squad) could designate for CAS/Copperhead.

Issue: High-technology combat observation lasing teams (COLTs)

Discussion: The current COLT organic equipment includes a G/VLLD, an AN/TAS-4 Thermal FLIR night sight, a (Mini-Eyesafe Laser Infrared Observation Set [MELIO]), and a Precision Lightweight GPS Receiver (PLGR). Using the lasers in conjunction with the thermal night sight and the PLGR, the COLTs can accurately determine enemy location. However, environmental factors, human error, and the condition of the aging equipment all play an important role in accuracy.

After obtaining a distance and direction from the laser devices, the COLT must still enter the data into the PLGR to obtain the target location. The process is not time consuming, but it is far from simply pulling a trigger. With the advent of the Long-Range Survey System (LRSS), target location is simplified and nearly eliminates human error. The LRSS combines a next-generation thermal site, an internal GPS self-locator, and an exceptional day-TV site into one package that only requires the operator to pull a trigger to obtain an extremely accurate grid location for anything in its cross hairs.

The lack of a laser designator, as well as low-visibility environmental conditions (dust, rain, fog, etc.), limits the LRSS. The G/VLLD is aging and repair parts or replacement G/VLLDs are difficult to obtain. The TAS-4 is a first generation night sight that is outdated when compared to the LRSS. Finally, the LRSS’s “zoom” capability out-performs the G/VLLD 13X magnification. The only advantage of the G/VLLD is the ability to designate.

The first day of the war perfectly illustrates how the COLT teams’ inferior equipment led to a change in doctrine. Indirect artillery fires and rotary-wing attack aviation were used to destroy ISR outposts along the Kuwait-Iraq border, a forward observer’s mission by doctrine. BRT scouts (with LRSS) were chosen as the primary observers to facilitate the destruction of the ISR outposts over COLTs.

Recommendation: Equip the COLTs with superior optical targeting devices with a laser designation capability.

Issue: Unit basic load (UBL) validation

Discussion: 31D (M) DIVARTY designed and drew a UBL based on wargaming and analysis from a variety of sources. During the war, maneuver commanders opted for higher concentrations of HE because of concerns about DPICM.

Additionally, the new M795 HE round affords units an added 4 km range. The increased range of this round would have helped during all stages of the war.

The following chart shows 3ID (M) DIVARTY's recommended UBL for a DS battalion involved in high intensity conflict in Southwest Asia.

OLD Battalion UBL

DODIC	Nomenclature	DS BN
D061	SADARM	115
D505	ILLUM	50
D528	SMK (M825)	351
D544	HE (DEEP)	1002
D529	HE (M795)	0
D550	WP(M110)	136
D563	DPICM	1800
D579	HE(RAP)	700
D864	DPICM (BB)	1300
TOTAL		5544
D510	COPPERHEAD	90
D532	M203	1450
D533	M119A2 RED	2450
D541	M4A2 WHITE	1644
TOTAL		5514

Recommended Battalion UBL

DODIC	Nomenclature	DS BN
D061	SADARM	115
D505	ILLUM	50
D528	SMK (M825)	351
D544	HE (DEEP)	0 (-1002)
D529	HE (M795)	1702 (+1702)
D550	WP(M110)	136
D563	DPICM	1200 (-600)
D579	HE(RAP)	1100 (+400)
D864	DPICM (BB)	800 (-500)
D510	COPPERHEAD	30 (-60)
TOTAL		5544
D532	M203	1000 (-450)

D533	M119A2 RED	2450
D541	M4A2 WHITE	2064 (+450)
TOTAL		5514

Sense and destroy armor (SADARM) performed better than expected and ended up the preferred precision munition for DS battalions and their maneuver commanders. SADARM killed 48 pieces of equipment out of 121 SADARM rounds fired. Units also found they could fire substantially less than the doctrinal 24 rounds to achieve effects on target. Because of the success of SADARM, unit TTPs were four rounds in effect against a point target. BCT commanders and fire support teams, on the other hand, chose not use Copperhead during the operation.

Recommendation: Based on ROE, increase HE (M795) and HE (RAP); decrease DPICM and BBDPICM on the UBL. Revisit sense and destroy munitions as a precision killer for the artillery. Decrease Copperhead allocations.

Issue: DIVARTY had inadequate flexibility of MLRS munitions.

Discussion: During Operation IRAQI FREEDOM, 1-39 FA drew its UBL consisting of 270 M26 pods and 54 M39 ATACMS missiles. Despite initial reports to the contrary, M26A1 pods were not available in theater. This forced DIVARTY and 1-39 FA to conduct operations without conventional extended range rockets. The M26 rocket proved effective and accurate, but the enemy systems consistently outranged our artillery. The M26A1 would have proven beneficial to mitigate this range disparity.

Lack of release authority precluded 3ID (M) from firing any ATACMS during the battle. As a result, the only ATAMCS rounds fired were in support of a V Corps deep attack before the ground war started (3 missions, 6 missiles).

The only munitions currently available for standard MLRS rockets are the DPICM sub-munition. The ROE limited our ability to use MLRS in many cases. Fires in highly congested areas and civilian populace centers precluded the use of MLRS fires, especially within the city confines of Baghdad. Development of different types of MLRS munitions such as SADARM, brilliant antiarmor submunitions (BAT), smoke type precision munitions, and an HE conventional rocket similar to the Unitary missile would have greatly added to the flexibility in employing MLRS.

Recommendation: Ensure M26A1 rockets are available for future combat operations; develop an MLRS suite of munitions that allow for greater employment on the battlefield.

Issue: Inadequate resupply of artillery Class V

Discussion: DIVARTY conducted extensive ammunition planning using the MDMP process to establish our Class V required supply rates (RSR). Corps never approved our RSR and published it as a controlled supply rate (CSR). Additionally, although initially approved, corps denied ammunition required for preparatory fires at the last moment. DIVARTY never received a resupply of ammunition based on our RSR, a CSR, or any other specific request. When ammunition did arrive in the ASP, it was usually "pure" as opposed to broken down into usable combat configured loads, and it usually arrived with powders and fuses that were incompatible with the rounds. Corps throughput only happened once and with only three flat racks, which DIVARTY soldiers

personally escorted from the division support area (DSA) to an ammunition transfer point (ATP).

Corps and theater tried to manage ammunition by calling and asking for expenditures by round and type per day so they could determine what to send us. Classes of supply are managed by expected/planned consumption, not expenditures. Artillery Class V should be no different.

The only way resupply ever worked was when DIVARTY took the non-doctrinal approach of sending unit palletized load systems (PLSs) and ammunition platoon leaders to stay in the ASP and wait for useable/complete rounds to arrive from corps. Once enough complete rounds arrived, the platoon leaders would drive them all the way from the DSA to their service batteries.

Recommendation: Theater must supply adequate transportation assets to support pushing CSRs forward. Division must insure it bases ammunition resupply on planned consumption figures from DIVARTY, not expenditures. Ammunition must be broken down and matched properly by echelons above battalion.

Issue: Increase the ability for command and control on the move for the DIVARTY TOC, BDE FSEs, and field artillery battalions. Incorporate the ability to operate two C² nodes simultaneously at the BCT level.

Discussion: Field artillery HQs at all levels experienced C2 problems while on the move due to the speed and distance of the operation. At the major subordinate commands (MSC) level, Operation IRAQI FREEDOM produced a necessity to operate two command and control nodes simultaneously. Neither the BDE FSEs nor the DIVARTY TOC are manned or equipped with vehicles and radios to operate two TOCs.

At the BCT, doctrine calls for the FSCoord's HMMWV as the primary communications platform for a BDE TAC or jump TOC. This reliance is not feasible, especially if the second TOC is more permanent than doctrine implies, as was the case in Operation IRAQI FREEDOM. BDE FSEs need a second crew and vehicle with communications to meet the fire support needs of the BCT on the modern battlefield.

Manning and equipment in the DIVARTY only supports one operational TOC. While doctrine calls for a reinforcing BDE to pick up C2 responsibilities for short durations, the DIVARTY did not have a reinforcing BDE for the first seven days of the war. When they did, MSU operations greatly enhanced C² on the move.

At the FA battalion level, problems resulted from outrunning FM capabilities. BDE level MSCs and above relied on AN/PSC-5 Spitfire SC TACSATs to communicate, but at BN level, FM communications were inadequate. Battalions developed TTPs using quick erect antenna mast system (QEAMS), OE-254s with multiplexors, and rolling retrans on the move, but still experienced degraded FM communications while moving great distances.

Heavy division artillery MTOEs equip the DIVARTY TOC with M934A2 expando 5 tons. These vehicles are slow, cumbersome, and require the TOC to power down digital communication packages before moving. The DIVARTY TOC developed TTPs on which nets the HMMWVs would monitor, but still faced degraded FM capabilities while moving. The DIVARTY TOC also powered down AFATDS boxes before moving due to the expando vans' inability to power the boxes on the move. This resulted in delays in

establishing a firing capability at the new locations. As an interim fix, DIVARTY reconfigured two M1113 RWS HMMWVs for the operations and fire control elements to jump without losing digital capability with AFATDS. The remote work station (RWS) HMMWVs, however, lack the ability to operate as an MSC platform for extended periods.

Recommendation: Change the MTOE to provide DIVARTY a hardened package that communicates on the move. Incorporate M577A3s or command and control vehicles (C²Vs), possibly augmented by M1113 RWSs, for the DIVARTY TOC. Increase long-range communications platforms, including AN/PSC-5 Spitfire Radios, AN/PRC-150 Harris HF radios and QEAMs. Explore increased BDE FSE equipment and manning to accommodate BCT changes in doctrine. Develop an all-weather QEAM-style antenna that operates on the move and increases the ability to establish firing capability quickly.

Issue: Too many/different/non-compatible information systems

Discussion: The Army has too many Army Battlefield Communications Systems (ABCS) and Situational Awareness (SA) systems. Each BOS has developed an information system to suit its particular requirements but little interoperability or commonality exists. The problem lies in commonality and training between systems. This lack of communication causes frustration for MSC level commanders since they do not have the assets to effectively merge these systems into one common operating picture.

As a result, 3ID (M) DIVARTY during Operation IRAQI FREEDOM monitored following information systems at one time or another:

1. Automated Deep Operations Coordination System (ADOCS)
2. Command and control personal computer (C²PC)
3. Maneuver Control System Light (MCS-L)
4. Remote work station (RWS)
5. All Source Analysis System Light (ASAS-L)
6. Advanced Field Artillery Tactical Data System (AFATDS)
7. Effects management tool (EMT)
8. Joint Early Warning System (JWARN)
9. Force XXI Brigade and Below C² System (FBCB²)
10. Terrabase/SPEED (Terrain Analysis and Profiling Systems)
11. Microsoft Internet Explorer for access to 3ID (M) TACWEB
12. Microsoft Outlook Mail to transmit FRAGOs

This plethora of systems presented a tremendous challenge to the DIVARTY staff in giving the commander information in a synchronized and homogenous manner.

As an example: At one point during combat operations while the DIVARTY was located in position area for artillery (PAA) WILCOX, the counterfire picture was being tracked on ADOCS, unit locations were displayed via C²PC, and counterfire missions were being transmitted via AFATDS. Add to this the requirement to stand up a JWARN station when M22 alarms at the DTAC were activated to plot downwind hazards and possible jump locations being analyzed for communications suitability on Terrabase.

Although some of these systems do, in fact, communicate with one another, most do not and, therefore, there is no commonality between user functions, graphical displays, and optional features. Disparate operating systems compound this throughout the range of systems (Windows, UNIX, SOLARIS, etc.)

Recommendation: Standardize systems in some key areas:

1. Standard operating system
2. Standard "iconology"
3. Standard networking protocols
4. Standard interfaces to various transmission media

The required end state product is something similar to the Microsoft Office. Each of these applications, though designed to perform a different business function, are completely compatible with each other. The CEO of any typical business has nearly every software tool needed from accounting, to correspondence, to spreadsheets that graph product performance, to databases that can track inventory.

The Army would benefit immeasurably from a one-stop compatible hardware and software package that allows a commander to synchronize all of the battlefield operating systems within the unit.

Issue: Command and control vehicle (C²V) operations – How continuous command and control of the divisions close fight worked and how to improve on it

Discussion: The division received three command and control vehicles (C²V) in late October 2002: One for the commanding general's attack command post and two for the DTAC. There are fire support positions in both the ACP and the ADC (M)'s C²V. Of the four FM radios in the C²V, two were dedicated to fire support voice and digital nets. There is an AFATDS and the section moved the ADOCS into the vehicle when it moved. The AFSCOORD in the C²V became the center of gravity for fires in the close fight. All charts, tasks, and reporting procedures conducted out of a stationary TOC, were in the C²V while on the move. What the C²V lacked was the ability to talk on the division fires TACSAT net that was located in the M577A3.

Recommendation: A quick fix would be to add an additional TACSAT to the C²V so that it could be completely self-sustaining. That would allow the AFSCOORD in the C²V to have a back up when he is down for fighter management and would provide for redundant communications if one TACSAT went down.

A greater fix would be to acquire another C²V for use by all fires assets: artillery, Air Force, and attack aviation. One AFSCOORD would stay in the ADC (M)'s C²V, but there would be an AFATDS operator and the other AFSCOORD in the fires C²V, along with the ALO, his NCO, and the attack aviation LNO. There would be a requirement for five TACSAT nets (division fires, corps fires, joint air request net (JARN), ETAC net, and the division command), three FM nets (division fires voice and digital and Air Force), and one UHF net for the Air Force. The digital systems should include AFATDS, ADOCS, and FBCB². The addition of the fires C²V would reduce the footprint of the DTAC by two tracked vehicles and a HMMWV and would provide for constant synchronization and deconfliction of fires on the move. The secure intercom, integral to all C²Vs, would provide the most updated information to the AFSCOORD in the ADC (M)'s C²V and would provide for more a timely response with fires.

Issue: AFATDS performance during Operation IRAQI FREEDOM

Discussion: AFATDS proved battle worthy in technical and tactical fire direction. For most of the war, digital communications existed from CFLCC down to the shooter level, with the exception of FM range limitations between battalion and brigade level echelons. Digital interface with the AFCS worked as expected and battalion-to-battery FDC digital communications worked well. The problem with establishing digital communications was between the battalion FDC/TF FSE to BDE FSE and DIVARTY. Many of the problems at the BN and BDE level were due to distances involved on the battlefield.

BDE FSEs and DIVARTY had the ability to establish connectivity via the MSE LAN. This aided in passing traffic to battalion boxes out of FM range by relaying through LAN connected boxes at BDE level.

3ID (M) DIVARTY's training level on the use of Enhanced Position Location Reporting System (EPLRS) was not sufficient to warrant use during the war. EPLRS, however, proved a capable distance enhancing communication platform for the ADA's Air Missile Defense Warning System. This platform warrants testing during future training to mitigate AFATDS FM digital communications range limitations.

Recommendation: AFATDS proved a reliable system. Continue to use AFATDS as the artillery's tactical and technical fire direction system. Test EPLRS as a possible solution to mitigate long-range digital communications limitations.

Issue: DREAR FSE

Discussion: An assessment was made in garrison prior to deployment that DREAR FSE personnel and equipment would be provided from internal assets. The division reviewed DREAR SOP Appendix 3 (FIRE SUPPORT) in the Fall 2002 and published it. In late January 2003, DIVARTY tasked the division FSE to provide the DREAR with a functional FSE attached to the rear operations center (ROC). One officer (O-3) and one FSNCO (E-5) were assigned to this task as well as an additional FSNCO (E-7) who came out of the ROC. Over a two-week period, DIVARTY procured the equipment from various sections within the division FSE as well as HHB DIVARTY.

Once operational, the DREAR FSE had just enough equipment to function as a liaison element rather than an actual FSE that could process and control fires. Due to shortages of radios, power supplies, an AFATDS system and a laundry list of other priorities to support, the FSE was only equipped with ADOCS and a digital non-secure

voice telephone (DNVT) for connectivity throughout the war. A stand-alone ADOCS server gave us the capability to monitor fire support events and plans as long as the main server was online to push out updated data. ADOCS, being a planning tool however, did not give us the capability to communicate with firing units such as a tactical combat force FSE. This had to be done via FM within the ROC. The expectation before combat operations was risk would be accepted in the division rear area.

During combat operations, the DREAR FSE provided the ROC and Assistant Division Commander (Support) (ADC-S) situational awareness on fire support events taking place throughout the division AOR. The FSE also supported the DSA security plan by coordinating whatever assets were available, mostly TCF mortars. On several occasions, the FSE cleared fires with the 101st AAD while they attacked to secure lines of communication (LOCs) and urban areas bypassed by 3ID (M). Other clearance of fires included counterfire along the division rear battlespace (DRB) and targeting Fedayeen, paramilitary, and some Republican Guard (RG) forces attempting to disrupt our supply lines. Most of this was executed over DNVT or FM.

In support of DIVARTY, the FSE served as a conduit through which the DIVARTY XO could coordinate resupply of Class IIIBand V from the division materiel management center (DMMC) and G4. Class V resupply, particularly combat configured loads (CCLs) of HE, became an issue by G+4 due to unanticipated counterfire volume around urban areas and delays of logistics convoys trying to catch up to units along congested LOCs.

Recommendation: On the books, DIVARTY has no responsibility to provide a fire support element to the DREAR. However, the DREAR has come to expect one as SOP from the training relationships established during division "Warfighter" exercises. Although the DREAR FSE is not a critical node, it does have a use in liaison and coordinating fires needed in an asymmetrical battlespace. The best course of action is to provide the ROC an FSE by MTOE and to task a Georgia National Guard artillery battalion to provide the necessary personnel and equipment. An FSE provided by the Guard should have a habitual training relationship with the ROC. This would relieve the division FSE of having to strip personnel and equipment at the last minute to stand up another FSE for every "Warfighter" or deployment.

Issue: Reception, staging, onward movement, and integration (RSOI): Poor fidelity of APS Grid

Discussion: While at home station, visibility of what was on the Army prepositioned stock (APS) draw grid was only available through the APS Battle Book System. Therefore, the system drove decisions on what to ship. Unfortunately, what the APS battle book system said was on the draw grid and what was actually on the ground were vastly different. This caused tremendous difficulties when trying to properly equip battalion and battery sets. Further complications arose when CFLCC designated several HMMWVs for contractors out of 3ID (M)'s allocation. This resulted in a 31 HMMWV shortage for DIVARTY. Shortages were eventually filled, at the cost of several man-hours of staff work and lost training time for units.

Recommendation: The exact status of the APS grid should be posted to a SIPR web site that would be available to all units (down to BN level) and continuously updated prior to and during deployment so there would be no confusion as to who had ownership of which vehicles. Additionally, having individual-vehicle fidelity on the draw grid (including maintenance status and shortages) could expedite preparation of hand receipts and other actions, before a unit ever deployed.

Issue: Deploying as a task-organized unit versus a pure unit.

Discussion: We deployed an artillery battery with each task force. However, the fire support element equipment was not part of the draw grid of their respective maneuver unit, rather, it was on the HHB draw grid. This precluded the FSE elements from having an initial operating capability as the task force became operational. In addition, all FSEs had to go back to Camp Doha to draw their equipment as HHB deployed in theater.

Recommendation: Set draw grids task organized or deploy as a pure unit and deliver combat capable FSEs ready to perform all mission essential tasks to their respective task forces.

Issue: Lack of logistics support for 1-39 FA (MLRS)

Discussion: 1-39 FA is a unique unit because it is the only general support (GS) battalion in the division with a brigade HQ. As such, 703rd MSB supported it, but spent most of the war moving through BCT areas. During combat, area support was utilized and 1-39 FA drew all classes of supply except Class IX from the closest FSB. This system worked up to OBJ Lions because of planning done before the war, however, it lacked flexibility.

If an unplanned shift in the scheme of maneuver occurred, 1-39 FA would have been left without an FSB capable of supporting it. Additionally, almost all bulk and special supplies were pushed from division to BCTs. Since 1-39 FA (and HHB DIVARTY) is not in a BCT, it was often left out of the distribution. 1-39 FA, like 3-7 CAV, is responsible for ranging the entire division zone. Therefore, like 3-7 CAV, 1-39 FA should have a dedicated forward logistics element (FLE) during all operations.

Recommendation: Resource a FLE for 1-39 FA.

Issue: Target analysis and target production section (TPS) manning at DIVARTY level for counterfire

Discussion: The TPS is too small to support the changing doctrine and is assigned to the wrong MTOE. New doctrine and capabilities allow fewer fighting forces to travel faster and fight over longer distances. While these capabilities initially allowed 3ID (M) DIVARTY to fight without a reinforcing FA BDE, it required different and more robust configurations in C² that are not supported by MTOE equipment or personnel.

The DIVARTY counterfire officer is assigned to HHB DIVARTY, while TPS personnel are assigned to A BTRY of the division MLRS BN. As a result, the counterfire officer is responsible for a section that does not fall under his supervision or within his chain of command.

Six personnel proved inadequate to operate for extended periods during the war. During one instance, the DIVARTY TOC split, forcing the TPS to man two teams of three personnel. This limited both teams' ability to man their sections for 24-hour operations.

The TPS MTOE for equipment, automation, and communications is also inadequate. DIVARTY tasked one of the DS battalions to provide an additional AN/VRC-92 to the TPS, enabling the section to communicate under split operations. Additionally, two

HMMWVs are not enough for the section to operate and does not provide for digital communications on the move.

Recommendation: Assign the target production section to DIVARTY's MTOE. Increase manning to eight personnel and three vehicles. The 10 personnel need to include one x CW3, 1 x WO1/CW2, 1 x 13R40, 1 x 13F20/30 and 4 x 13F10. Equipment MTOE changes need to include an M113 RWS shelter, 2 x M998 HMMWVs, 4 x QEAM antennas, 4 x AN/VRC 92s, and 2 x AFATDS computers in addition to 2 ADOCS platforms.

Issue: Replacement operations.

Discussion: Since the onset of the war, DIVARTY received roughly 20 replacement soldiers. Most of the replacements were stranded in Kuwait for the entire combat operation, leaving some critical positions unfilled. Additionally, DIVARTY lost eight soldiers, including three key leaders, to combat operations and they were never replaced.

Recommendation: The theater needs to refine its system to push replacements forward to units in theater. Replacement for leaders killed in action is imperative. Units can continue operations without them, but it is more difficult. Key leaders that are needed up front should be placed on supply convoys or flown forward with air assets.

Chapter 13 Aviation Operations

Chapter Contents

Introduction/Lessons Learned

Topic A – Liaison Officer Distribution and Equipment Requirements

Topic B – Restructure of the Aviation Support Battalion Modification Table of Organization and Equipment (MTOE)

Topic C – Army Transformation Initiative Degradation of General Support Aviation Battalion Support to Heavy Divisions.

Topic D – Enhanced Optics Requirements

Topic E – Close Combat Attack Training

Introduction

Army aviation played a key role in the defeat of the Iraqi regime and bringing freedom to the Iraqi people. The speed and flexibility of Army aviation directly contributed to the success of the division and proved invaluable during Operation IRAQI FREEDOM (OIF). This chapter addresses the issues that require immediate attention to enhance our capability to support Army aviation across the operational continuum.

Lessons Learned

- Divisional attack helicopter battalions are best suited to conduct close attack operations and shaping operations in the heavy division
- The responsiveness of Army aviation is directly linked to the command and control architecture and the nested long range communications available
- Army Transformation Initiative (ATI) degraded the general support aviation available to support the division
- Close combat attacks and enroute combat maneuvers must be included in our training base
- The aviation support battalion lacks depth in the current MTOE to sustain all tactical logistics (TACLOG) functions in support of the brigade
- Long range communications must be procured to overcome and sustain continuous offensive operations
- Close attack operations require enhanced optics to acquire and identify with confidence threats on the battlefield beyond the three kilometer capability of our current forward looking infrared (FLIR)

- Army aviation must expand its capability in doctrine, training, and resourcing to address the shortfalls in liaison operations
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Chapter 13 Aviation Operations

Topic A - Liaison Officer Distribution and Equipment Requirements

Issue: Aviation liaison officer distribution and equipment requirements

Discussion: 4th Brigade was fortunate that the attack battalion had additional captains to augment the increased demand for aviation liaison officers (LNOs). In addition to the position of the assistant division aviation officer (ADAO), the division required LNOs for in each brigade combat team, the division tactical action center (DTAC), and as an attack planner. The general support battalion provided an LNO to the division rear. Liaison officer distribution greatly impacted the ability of the attack battalion staff to plan, execute, and battle track operations. The battalion was left with one aviation captain and a chemical officer to execute operations. No MTOE equipment was available for these LNOs. Limited resources were stripped away from other staff sections to fill the void in both mobility and communications to support liaison operations. The liaison officer concept benefited both the BCTs and the battalion and directly contributed to the success of the brigade in supporting operations. This was especially true with the air-ground integration and support to 3rd BCT. This liaison concept must be maintained as we relook the role of the attack battalion in the heavy division. The liaison officer is critical in the planning and execution of close attack operations. They provide a link to rotary wing aviation that is similar to the Air Force air liaison officer (ALO) or the Marine Corps air and naval gunfire liaison company (ANGLICO).

This function must continue to be developed to provide responsive attack and lift assets to the BCT in the heavy division. The adjustment to the MTOE is the start point for the continued success of this liaison team.

Recommendation: Provide a liaison team with sufficient personnel to conduct 24-hour operations with the ability to plan, execute, and track the employment of aviation assets. The recommended number of teams is four in the attack battalion and two in the assault battalion. Each team is composed of 1 x15B, 1x 93P30, 2x 93C.

Increase attack and battalion MTOE to provide up armored high mobility multipurpose wheeled vehicles (HMMWVs) for each liaison team with a similar communications suite provided to the air traffic service (ATS) company in the Tactical Terminal Control System (TTCS). An additional M998 for the other half of the team is provided for mobility. Incorporate Force XXI battle command brigade and below (FBCB²) and tactical satellite (TACSAT) into the liaison teams package.

Revise doctrine through the Army Aviation Center, Director for Combat Development to expand the role and functions of the heavy division liaison officer.

The Army Aviation Center develops introduction of basic liaison skills and functions to include integration into the military decision-making process (MDMP) at the Basic Course and expands on this function at the Captains' Career Course (CCC). All liaison officers should attend the Joint Firepower Controller Course after finishing the CCC.

Liaison officers should be post command captains and, at a minimum, CCC graduates.

Chapter 13

Aviation Operations

Topic B – Restructure of the Aviation Support Battalion MTOE

Issue: Restructure the aviation support battalion MTOE to support combat operations.

Discussion: The aviation support battalion is a critical component of the 4th Brigade to sustain air and ground maintenance. This structure works well in garrison, but does not have the depth or the requisite functions to support combat operations. This is due to a shortfall in the ability to support the six TACLOG functions. This is further magnified at the maintenance support team (MST) for both air and ground, as they do not have the necessary equipment or personnel to perform these functions. As a result, the ground MST that supports the division cavalry squadron is augmented, when possible, by the division support command (DISCOM) to reinforce the ground MST capability. The ground MST lacks the missile support and the necessary test and diagnostic support to keep both M1 and M3s fixed as far forward as possible. This is also true for the air MST, but sufficient depth between aviation unit maintenance (AVUM) and aviation intermediate maintenance (AVIM) structure mitigate some of these shortfalls, provided the aviation support battalion (ASB) is not operating in excess of 12 hours from the division cavalry squadron to accommodate logistical resupply windows. Of the six TACLOG functions that a forward support battalion provides, the aviation support battalion lacks the capability to support “move” and “sustain” functions. It is only 50% mobile and lacks a medical company. The ASB assisted 4th Brigade by placing all of A company’s equipment on the ground and using 5T and stake and platform (S&P) trailers to move the ammunition and the Class IX and additional Class I requirement 4th Brigade needed to support fluid offensive operations. Emplacing a palletized load section (PLS) will offset this problem. Two additional TACLOG functions that demand an increase in capability to sustain combat operations are “fuel” and “arm.” The daily Class III (air) bulk demand was 30,000 gallons per day. The internal bulk capability after removing the forward arming and refueling point (FARP) augmentation requirement of the ASB is 20K, and the difference in the daily bulk fuel requirement was overcome by making multiple turns to the bulk fuel distribution point. Although this work-around enabled 4th Brigade to maintain an adequate quantity of JP8, it was not feasible to sustain over a long duration. This negligible short fall can be easily overcome by providing additional 5K tankers to the ASB. The last critical shortfall in the ASB was the lack of depth in the “arm” function of the battalion. The density of ammunition specialists and equipment available does not support the ammunition basic loads (ABLs) that are maintained by the attack helicopter battalion and, if necessary, the division cavalry squadron. This function requires an ammunition transfer point (ATP) capability based on the density of munitions maintained and distributed to the subordinate battalions. Success in these TACLOG functions is doctrinally solved by corps throughput or augmentation. At the initiation of this operation, many of the echelons above division (EAD) assets required were not in theater or still conducting reception, staging, onward movement, and integration (RSOI). The outlined TACLOG enhancements are critical to meet the sustainment requirements of 4th Brigade. An MTOE review will identify by line the shortfall of personnel and equipment required to fulfill the same functions of the FSB in support of the BCT

Recommendation: Review the MTOE and make corrections to reflect the necessary requirements to sustain all TACLOG functions in support of the brigade. Procure required equipment to support medical, fuel, ammunition, and move functions of the aviation support battalion.

Chapter 13 Aviation Operations

Topic C – Army Transformation Initiative (ATI) Degradation of General Support Aviation Battalion (GSAB) Support to Heavy Divisions

Issue: Army Transformation Initiative degradation of general support aviation battalion (GSAB) support to heavy divisions.

Discussion: 4th Brigade underwent the restructuring of the general support aviation battalion as a component of the Aviation Transformation Initiative (ATI). This reduced the number of UH-60 airframes from 24 to 16. This reduction of aircraft degraded the ability to conduct internal support to the brigade and external support to the division during combat operations. The number of available aircraft based on maintenance was 12 of the 14 on hand. Of these aircraft and crews available, five were available to support both internal and external general support missions. We maintained two command and control aircraft to support 4th Brigade and division command group, two immediate personnel recovery aircraft for downed aircrew extraction, two casualty evacuation aircraft to augment medical evacuation (MEDEVAC), and one downed aircraft recovery team (DART) aircraft. This is extremely inadequate when looking at the battlespace the division covered and the length of our ground lines of communication (LOCs) to support combat service support (CSS) functions. The battalion did conduct high priority parts runs back to Kuwait, but the frequency was not sufficient to meet demands. Additional Chinooks from the corps were provided on one occasion to support emergency Class V operations. The augmentation of a minimum of one heavy lift platoon to conduct routine GS mission sets to support CSS operations would have alleviated some of our shortfall. Changing the MTOE back to the 24 aircraft structure prior to ATI would enable the battalion to support these critical general support mission sets. This would provide the division greater capability to conduct airborne command and control, airborne retrans, augment MEDEVAC, provide limited infiltration/exfiltration of small dismounted units, and most importantly reinforce the move TACLOG function to support sustainment operations.

Recommendation: Change the MTOE back to provide the general support aviation battalion 24 aircraft in the heavy division. This will provide the airframes to support the troop to task required to sustain heavy division operations and provide the depth in airframes necessary to support CSS operations.

Chapter 13 Aviation Operations Topic D – Enhanced Optics Requirements

Issue: Generation I forward looking infrared (GEN I FLIR) is a serious deficiency in the Apache and has shown little improvement in 20 years.

Discussion: The enemy in OIF hid much of its combat power, to include deadly ADA systems, in and around urban areas and under groves of palm trees. This became more evident as 4th Brigade closed on Baghdad. Aircraft operating in and around the Euphrates River basin identified numerous air defense artillery (ADA) and armor family of vehicles (AFVs) dispersed in the farms and palm groves east of the river. GEN I FLIR was unable to assist the pilot with early identification of systems hidden in this manner. The lack of fidelity to identify threats in the close fight denied the aircraft the ability to make maximum use of its weapons stand off. The 1-3 ATKHB commander required visual identification in order to prevent fratricide. At distances exceeding 3 km at night, positive identification was impossible. Although it greatly improved our ability to fly in the 0 % illumination conditions that existed for the majority of operations flown, its ability to see large wires and towers around urban terrain is also questionable and places undue risk on the pilot and mission. Furthermore, even in close distances, the GEN I FLIR is incapable of differentiating between soldiers and civilians, further complicating air-to-ground integration in close combat attack missions on the urban periphery.

Recommendation: Purchase and install GEN II FLIR as soon as possible for the AH-64 fleet. Prioritization should be given to division attack helicopter battalions in the DA Master Priority List (DAMPL) sequencing.

Chapter 13

Aviation Operations

Topic E – Close Combat Attack Training

Issue: Static hover fire techniques in attack by fire (ABF) and battle positions (BPs)

Discussion: Enemy ADA units had improved since Operation DESERT STORM in their ability to target attack helicopters. ADA systems were placed in the tree lines and in urban areas to exploit Apache vulnerabilities. On one occasion, the enemy employed an obviously lucrative target, a T72 tank, in the open with the expectation of drawing Apache helicopters into an ADA ambush. Fire to the exposed flanks and rear of the aircraft was constant in many attacks. Intelligence confirmed the use of ADA ambush experts in the Iraqi military.

Recommendation: Incorporated moving fire and dynamic engagements during peacetime training, especially in the Longbow cockpit training (LCT) and during Table V-VIII aerial gunnery densities where we can practice actual engagements on stationary and moving targets. Change the MTOE to provide 21 aircraft to perform security tasks during actions in the ABF.

Issue: Lack of doctrinal, standardized maneuvers to break contact and/or suppress enemy enroute.

Discussion: The current FM 1-112, Appendix F is titled "Air Combat." Some of this appendix discusses "air to air combat" but also discusses "air to ground combat" and some team and company TTPs. This confusing appendix represents the only "current"

attempt to address this subject in doctrine. Enroute combat maneuvers (ECM) were re-created by 1-3 ATKHB from previous air combat maneuver doctrine. This TTP is a method to react to enemy fire enroute, suppress and, reorganize to continue the mission. Having a common, trained TTP throughout the battalion proved invaluable.

Recommendation: Forward ECM as a TTP to Army Aviation Branch to be incorporated into training and doctrine.

Issue: Lack of doctrinal, standardized maneuvers for running fire engagements.

Discussion: The aircrew training manual (ATM) and gunnery manuals discuss running fire engagements. It does not, however, discuss implementation of these tactics, supported training/gunnery, or control at the team, platoon, or company level. Close combat maneuvers (CCM) was re-created and refined by 1-3 ATKHB from tactics used in Vietnam and over water engagements in Korea. These running fire tactics were organized into circuits based on the enemy, using two methods of attack. Running fire provided enhanced accuracy during rocket engagements and added security during 30mm engagements. Team members and command and control shared a common picture of the situation.

Recommendation: Forward CCM as a TTP to Army Aviation Branch to be incorporated into training, Table VII/VIII gunnery tables and doctrine.

Chapter 14 Close Air Support (CAS)

Introduction

Throughout Operation IRAQI FREEDOM (OIF), close air support (CAS) played a significant role in the success of Third Infantry Division (Mechanized) (3ID (M)) on the battlefield. CAS successes ranged the full spectrum of combat operations and CAS was used for missions including shaping, armed recce, counterfire, and troops in contact. A total of 925 CAS sorties were flown in support of 3ID (M) resulting in 656 enemy combat systems destroyed and 89 enemy facilities destroyed. Corps shaping accounted for an additional 3324 sorties destroying an estimated 2400 enemy targets. Two contributing factors to the success of CAS were its responsiveness and lethality. The following lessons learned highlight both CAS successes and shortfalls:

Lessons Learned

- CAS is a great combat multiplier. Integration and relationships between fire support elements (FSE) and the tactical air control party (TACP) are a must.
- CAS stacks and push CAS facilitate quick response and greater on station time for aircraft.
- Precision-guided munitions bring lethality to the battlefield. Insure planning is done in advance to insure ordnance is included in the air tasking order (ATO)
- For counterfire, use CAS only if acquisitions are outside the range of organic indirect fire systems or if rules of engagement (ROE) dictates precision munitions be used.
- Address CAS counterfire in the special instructions (SPINS). Insure that Q-36/Q-37 is classified as a positive identification source.
- Field a better vehicle and communications suite to provide the tactical command post (TACP) the ability to fight on the move.
- Coalition Forces Air Component Commander (CFACC) and corps need to push target sets and intelligence, surveillance, reconnaissance (ISR) assets down to division level for engagement.
- Division forward boundary (DFB) or the equivalent needs to be established before line of departure (LD). This will ensure that there are no questions as to who owns battlespace.

Issue: Success of CAS in shaping and support of maneuver.

Discussion: The working relationship between the fire support element (FSE) and air liaison officer (ALO) at the division tactical command post (DTAC) was exemplary, resulting in a dynamic “fires” team. Together they labored to provide a permissive environment for massing fires. Prior to OIF, tactics, techniques, and procedures (TTPs) were established allowing CAS aircraft to operate at and above 10 km, while artillery fires operated below. When this TTP could not be met, the team worked together to redirect systems for deconfliction. Division ALO and FSE worked together to clear targets though the restricted target list, facilitating quick CAS response times. Brigade

and division fire teams worked together to ensure clearance of fires. As a result, there was no fratricide due to CAS in support of 3ID (M).

CAS had a major impact on the battlefield. It was highly successful, both in shaping, as well as in the close fight. CAS was used for a number of different missions including armed recce, when ISR assets were not available; counterfire, when artillery was out of range or when collateral damage was a factor; shaping; and troops in contact. A total of 925 CAS sorties were flown in support of 3ID (M) resulting in 656 enemy combat systems destroyed and 89 enemy facilities destroyed. Corps shaping accounted for an additional 3324 sorties destroying an estimated 2400 enemy targets.

The old concept of CAS stacks and push CAS proved very effective. Division ALOs positioned CAS stacks to facilitate quick response based on the ground commander's scheme of maneuver as well as deconfliction from position areas for artillery (PAAs). As a result, CAS requests for troops in contact situations were available in 5-10 minutes. In fact, CAS was so responsive at times the air support operations center (ASOC) held CAS in waiting for division clearance. For all other requests, responsiveness ranged from 5-30 minutes. These delays were due to higher priority division requests being filled, as well as gaps within the air tasking order (ATO). There were very rare occasions when weather increased the CAS responsiveness to 45 min to an hour.

Precision-guided munitions were a lethal combat multiplier. Joint direct attack munitions (JDAM) repeatedly proved its value as an all-weather, day or night, weapon. In a couple of cases, enlisted terminal air controllers (ETACs) produced outstanding results using JDAM and wind corrected munitions dispenser (WCMD) for troops in direct contact in near zero visibility. JDAM was also used to destroy enemy buildings with minimal damage to other surrounding structures. Although CAS had its challenges with the counterfire mission, JDAM was the division's weapon of choice for counterfire in urban environments to minimize collateral damage.

Recommendation: Continue to work with ALOs at both the division and brigade levels to build on what we have established during OIF. Early planning is crucial in order to influence the air tasking order to get precision munitions if required for the mission. Continue to work TTPs for CAS counterfire.

Issue: Use of CAS as a counterfire asset.

Discussion: CAS responsiveness, search time, and positive identification (PID) problems greatly reduced CAS effectiveness in a counterfire role. Although the consistent 5-10 minutes from CAS request to bombs on target is relatively quick for a "troops in contact" scenario, this is entirely too long for a counterfire mission. Even when we had CAS on station in the area of operations, the time it takes to talk the pilots eyes onto the target for PID is substantial. The fastest reaction time for a counterfire mission from acquisition to bombs on target was approximately 5-10 minutes. This was only due to the fact that the aircrew saw the flash from a subsequent volley of artillery fire while searching that area.

Search time and PID are two issues that are interrelated. The current special instructions (SPINS) do not recognize Q-36/Q-37 acquisitions as a source for PID. This drives our ETACs to do "talk-ons" to get the pilot to see the target for PID, either with his eyes or onboard sensors, before ordnance release. Operations at night and in inclement weather further complicate the problem with PID.

Q-36/Q-37 radars produce 10-digit grids that can be used to employ JDAM. If directed in the SPINS, pilots could release JDAM on target without having “eyes on.” In this scenario, the pilot can copy the grid from the ETAC on his way from the CAS stack and employ weapons on a first run attack; thereby drastically reducing response time, day or night, regardless of the weather.

To insure that we will have aircraft with JDAM munitions on board, we must predict and plan the counterfire fights as far out as possible in order to influence the air tasking order (ATO).

Recommendation: Fire supporters should always use artillery first for counterfire. Use CAS only for those acquisitions that are either outside the range of artillery or restricted by rules of engagement (ROE) due to chemical defense equipment (CDE) considerations. CAS stacks should be placed to facilitate quick response. Place written guidance in the SPINS specifically addressing CAS counterfire, specifying Q-36/Q-37 acquisitions as PID. Plan the counterfire fight as far out as possible to get JDAM munitions added to the ATO for allocation.

Issue: CAS was effectively employed in an urban environment

Discussion: CAS played an important role in urban operations when collateral damage was a concern. Precision weapons were used against targets such as artillery, surface-to-surface missiles (SSMs), and special operations forces (SOF) time sensitive targets (TSTs). Some great examples of this were in the cities of An Najaf and Karbala. CAS successfully engaged artillery and SSMs inside the cities with little damage to surrounding property and buildings. Army Tactical Missile System (ATACMS) and Multiple Launch Rocket System (MLRS) were attempted in the same fashion but with heavy collateral damage. Precision weapons were also successful in destroying buildings deemed hostile by the ground commander. Delay fusing and precision “bunker busting” munitions allowed the destruction of buildings while those beside it were left standing.

CAS was also effectively used in support of troops in heavy contact within urban terrain. On 25 Mar 03, 3-7 CAV found itself in a desperate situation in an urban environment. CAV was receiving persistent small arms and rocket propelled grenade (RPG) fire from dismounts and tech-mounted vehicles. Surrounded from all sides, the 3-7 CAV ETAC employed CAS aircraft carrying JDAM to hit the LOCs coming into the town. Air continued until all contact ceased. Once again, CAS was successful in support of 2nd BCT’s attack into Baghdad. Aircraft used their guns and JDAM to hit enemy positions along Highway 8 with devastating results.

Recommendation: Continue to refine our TTPs established for using CAS in MOUT. If precision weapons are desired, plan as far out as possible to influence the air tasking order. Use precision CAS assets when collateral damage is a factor.

Issue: Tactical air control party (TACP) equipment and communication shortfalls

Discussion: We broke down the DTAC into a mobile configuration (red) before or during every major operation with the exception of one. Situational awareness is dumped and communications between the ALO, fires, and G3 are challenged. Controlling CAS from a M113 is nearly impossible due to the amount of noise. It has enough room for our map board and computer but it is simply too loud inside to use our radios. Controlling

from a high mobility multipurpose wheeled vehicle (HMMWV) is just as difficult due to the lack of workspace. TACPs are using equipment and vehicle configurations that are not designed for fighting on the move. We were able to work around these shortcomings but execution was far less effective. To fight on the move, we need another weapon system platform.

The division TACP also requires two dedicated satellite communication/tactical satellite (SATCOM/TACSAT) nets; one for the joint air request net (JARN) and one for a division TACP command net. Because of the mobile nature of the fight, the speed at which we moved, and the size of the battlespace, SATCOM/TACSAT were the only reliable means of voice communication. Therefore, each TACP element also needs a minimum of two SATCOM/TACSAT radios (more if TACTR and data communications is also required).

In summary, division TACP requires a vehicle that can hold 2-3 people with working space. We require the following radios: 2 SATCOM/TACSAT, 2 FM/SINGARS, 1 UHF, and 1 VHF. Fighting on the move creates a very dynamic battlefield. We must have digital communications that can support SIPRNET as well as intelligence feeds while on the move. The optimum solution is to have the fire support element (FSE) and air liaison officer (ALO) collocated within the same armored vehicle. This would create a more dynamic mobile working environment, allowing the FSE and ALO to work together instead of over a radio net. ALO requirements would be the same with the exception of 1 FM/SINGARS could be omitted.

The final equipment shortfall noted is the lack of the ability to self-designate targets. TACPs require the capability to mark and self designate targets to better facilitate quicker target acquisition by aircrew and more accurate target coordinates for JDAM employment. Quicker target acquisition would increase responsiveness allowing more ordnance to be employed in a shorter period of time.

Recommendation: Add to our modified table of organization and equipment (MTOE) a vehicle that can be used by the division TACP for command and control of air assets. Field a better communications package to support TACP long haul and digital communications while on the move. Finally, provide the TACP the capability to mark and designate targets to increase responsiveness and lethality.

Issue: Coalition Force Land Component Command (CFLCC)/Coalition Force Air Component Command (CFACC) and corps engaging targets with CAS within 3ID (M) area of operations (AO).

Discussion: The division was consistently challenged by CFLCC/CFACC and corps attempting to engage targets with CAS and air interdiction (AI) inside 3ID (M) AO. Instead of passing intelligence information down to the division and allowing 3ID (M) elements to engage targets, higher headquarters insisted upon engaging the targets themselves. On several occasions no known coordination was attempted. On one occasion, the division ALO stumbled upon an operation that corps was trying to execute inside an objective that was cordoned by 3ID (M). Once again, the division did not coordinate with the brigade that owned the battlespace.

On another occasion, 3ID (M) ETACs reported explosions within their battlespace 4 km from their position. Several minutes later, corps contacted division, wanting to use that area to strike, control, and reconnaissance (SCAR) for enemy artillery and surface to surface SSMs. This was another example of corps engaging targets within 3ID(M)

battlespace without coordination. The danger here is obvious. Corps does not have the situational awareness (SA) to engage targets within battlespace that they do not own. There is a large possibility for fratricide.

CFACC also attempted to engage targets inside the fire support coordination lines (FSCL). Much to their credit, corps was able to stop a total of 14 of these attempts. However, an F-15E under CFACC control was successful in one attempt. The F-15E misidentified an MLRS as a surface to air missile (SAM) launcher approximately 15 miles from his position. The pilot found 14 vehicles in that area and asked permission from Airborne Warning and Control System (AWACS) to engage those targets. This incident is still under investigation but the end state was fratricide; 3 killed in action (KIA), 6 wounded in action (WIA), and 3 vehicles destroyed. This is unacceptable.

One contributing factor to confusion of battlespace ownership is the lack of a division forward boundary (DFB). Without the DFB, there is no definition of where division battlespace ends and corps battlespace begins. With the establishment of the DFB, coordination between corps and division improved.

One more topic worthy of discussion is the argument of engaging targets based on who has "eyes on." On many occasions, either with Hunter, Predator, or SOF, corps had more SA on the target than the brigade who owned that battlespace. Corps used this information as an argument that they should control the aircraft. The problem lies in the fact that corps may have more SA on the target; however, they do not have more SA on friendly forces in the area. Corps needs to either push the ISR assets down to the division or they need to coordinate with division for operations in our AO. Regardless, if corps does operate in our AO, one of our ETACs needs to be up on the control frequency with final control authority.

Recommendation: Before LD, establish clear and concise boundaries between corps and division battlespace.. Corps needs to pass intelligence and ISR assets down to the division for targets found within our battlespace. If higher headquarters needs to engage targets within division AO, detailed coordination must be done through both Air Force and Army channels. For CAS engagements within our AO, we must have our own brigade ETACs on control frequency with final control authority.

Summation: The working relationship between the FSE and ALO at the DTAC was exemplary, resulting in a dynamic "fires" team. Together we labored to provide a permissive environment for massing fires. CAS has proven itself as an indispensable asset to the ground commander. To insure future success, we must take from these experiences, lessons learned and then train them. We must continue to train as a joint team. Equipment and vehicle upgrades must be accomplished to guarantee that the TACP of the future has the tools to fight successfully while on the move. Army doctrine must be scrutinized to facilitate clear ownership of battlespace.

Chapter 15 Engineer

Chapter Contents

Introduction/Lessons Learned

Topic A - Terrain Analysis

Topic B – Reception, Staging, Onward Movement, and Integration (RSOI)

Topic C - Continuous Offensive Operations Over Extended Distances

Topic D - Transition to Stability and Support Operations (SASO)

Topic E - Engineer Specific Issues

Topic F – Command, Control, & Communications

Topic G - Engineer Equipment/Modification Table of Organization and Equipment (MTOE)

Topic H - Logistics

Introduction

3ID (M) engineers conducted an incredible number of missions and operated over extreme distances during Operation IRAQI FREEDOM. In spite of serious communications inadequacies, engineers executed all tasks because they understood a well-rehearsed and detailed plan and in the absence of orders followed commanders' intent. Augmented with an engineer group headquarters, the engineer brigade commanded over 3,000 soldiers and controlled three divisional mechanized battalions, one corps mechanized battalion, one combat heavy battalion, four multi-role bridge companies, a combat support equipment company, a terrain detachment, and an explosive ordnance disposal (EOD) company. Engineers focused on accomplishing "assured mobility" missions from reducing the border obstacle to building a C-130 airstrip at the corps' main logistics base. Engineers breached obstacles, marked and cleared routes, conducted traffic control, cleared bridges of demolitions, emplaced tactical bridges, constructed and maintained main supply (MSRs), and conducted reconnaissance of every type, to include combat reconnaissance of fixed bridges under fire. They also worked in conjunction with the EOD force to clear millions of rounds of munitions, hundreds of thousands of unexploded ordnance (UXO), and thousands of UXO sites. The engineer brigade and group headquarters were responsible for division level command and control (C²) missions such as a forward passage of lines (FPOL), crossing force headquarters, and restoring power, water, and sewage utilities to the city of Baghdad. Despite our successes, we faced numerous challenges in the campaign, to include inadequate communications architecture, combat vehicles that were not survivable, inadequate haul, low priority for every class of resupply, and an armor vehicle launched bridges (AVLB) fleet in crisis. Despite these challenges, and thanks in part to an enemy who was unable to sustain a coherent defense in the constricted

terrain that favored him, our engineers adapted and overcame these and many other obstacles to deliver assured mobility to the Marne Division.

Lessons Learned

- Combat engineers must fight well forward with maneuver forces to provide them responsive mobility support, but are not survivable to various asymmetric enemy capabilities.
- Engineers lacked the long range communications systems essential to control engineer operations that stretched over 250 km throughout the depth of the division's battlespace.
- The emerging doctrine of "assured mobility" provided a superior doctrinal framework for engineers to focus their efforts, but this operation implies a major overhaul of engineer training doctrine and tactics, techniques, and procedures (TTPs) must be undertaken to better prepare engineers how to fight in continuous offensive operations.
- Full utilization of a topographic detachment is critical to allow the commander to visualize the fight throughout the depth of the battlespace during planning and execution. These teams provided products that were essential to ensure common understanding of the terrain and the operation at all levels in the division.
- Units must focus on the "integration" of RSOI. Early communication, exchange of standing operating procedures (SOPs), and use of liaison officers (LNOs) facilitate success. Early deployment and subsequent task organization of echelon above division (EAD) assets is critical.
- Prioritizing engineer assets is critical when operating over extended distances, since the division attacked too quickly to mass engineer assets. Engineers must use tailored modules or "packages" to support missions – with implications for force structure changes.
- UXO and enemy Class V removal and destruction were so enormous that combat engineers were forced to work with EOD to dispose of this threat. This became particularly important as combat operations ceased and the division transitioned to SASO without adequate EOD to support it. One EOD company task organized direct support (DS) to the division did not respond to division needs throughout the campaign.
- Facilities engineer support and technical engineer experts and planners must be available immediately to transition to post-conflict reconstruction tasks as combat action transitions to SASO, particularly in densely populated urban areas.
- Engineer brigade headquarters (EMAIN) proved a viable maneuverable major subordinate command (MSC) headquarters for the division to execute multiple division-level operations; however, it needs to be able to operate independently.
- Engineer equipment is difficult to maintain and, in some cases, is not able to execute its designed purpose. The AVLB fleet is in crisis, the M113 fleet is not survivable forward, and the mine clearing line charge (MICLEIC) is ineffective against blast-resistant mines. The M9 armored combat earthmover (ACE) proved to be an

important and versatile piece of equipment, with acceptable operational readiness (OR) rates.

- All engineer units must have sufficient lift to haul all of their equipment at one time.
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Chapter 15

Engineer

Topic A - Terrain Analysis

Issue: Engineer lead in terrain visualization throughout the campaign

Discussion: Engineer delivery of terrain analysis was a huge success, enabling maneuver commanders to “see” the terrain like never before. Commanders continuously sought blow-ups of imagery, special map product operational overlays, slope tints, moisture content analysis, and terrain analysis briefings. The need to manually develop and study a modified combined obstacle overlay (MCOO) continues to be a necessary tool, since it serves as a forcing function for staff officers to understand the terrain to the necessary level of detail. Digitally produced MCOOs proved essentially useless, since the low-lying wet terrain made virtually the entire Euphrates-Tigris River Valley appear to be NO-GO. Engineers used terrain target folders during mission analysis to help commanders rapidly visualize the terrain to expedite decisions to focus the planning staff. Incorporating a terrain team task organized to the DS engineer battalion supporting the brigade combat team (BCT) proved essential to developing a detailed plan throughout the depth of the campaign that allowed common situational awareness of the terrain’s characteristics and the development of an extremely sound plan that incorporated all aspects of the terrain. This goal was only achieved because the division’s engineers worked hard in the preceding year to become terrain experts, both in the application of terrain analysis tools and software programs and in the tactical significance of terrain. At all levels the division’s engineers developed detailed tactics, techniques, and procedures (TTPs) and SOPs to integrate terrain analysis into the military decision-making process (MDMP).

Recommendation: Current terrain analysis doctrine should be reinforced for all engineer officers in the training base and at home station. The terrain teams should continue to be attached to DS engineer battalions to provide terrain analysis products and data. 81T Advanced Individual Training (AIT) should familiarize soldiers with all available terrain analysis software and applications and sharing capabilities. Engineers must be the staff terrain experts at all levels.

Issue: Organization of terrain teams

Discussion: When the division’s newly expanded terrain detachment was organized and equipped with Digital Topographic Support Systems, Light (DTSS-L) over a year ago, the division attached it and its six teams to the engineer brigade that trained and organized the teams to fight further attached to the engineer battalion’s DS to the maneuver brigades. This system worked extremely well and allowed the engineer brigade to mass terrain analysis capability to support division planners early in the planning stage, and then send the terrain teams, already equipped with intimate knowledge of the terrain as it related to the division plan, to the brigades. At the division level, the detachment supported the planners and the division tactical command post (DTAC), interfacing with first, the Coalition Force Land Component Command (CFLCC)

planners for terrain products and analysis, and subsequently, with the V Corps terrain team when they arrived in theater. The assistant division engineer (ADE) and his deputy directed the terrain analysis effort, integrating intelligence sources from the G2 and the Army Corps of Engineers and prioritizing production focus. Once the brigade terrain teams began operations, they refined products and focused on detailed brigade mission sets. In many cases, the brigades produced special terrain products useful to the division, which the engineer brigade was able to disseminate across the division.

Recommendation: Sustain the current method of organizing, training, and fighting the terrain teams in the division's terrain detachment.

Issue: Managing terrain visualization products

Discussion: Terrain visualization products, in combination with intelligence data from multiple sources, especially the National Imagery and Mapping Agency (NIMA), were critical to developing a coherent plan whose details were well understood by the entire division and allowed fairly detailed understanding of the terrain's limitations on operations. The enormously detailed division terrain analysis conducted by the planners ensured the division developed executable plans. For example, the division cancelled branch plans to cross the Euphrates at multiple locations when imagery revealed that they were waterlogged. Additionally, a detailed analysis of roads and routes to the south of the Sulaybiyat Depression confirmed these roads were trafficable, allowing the division to attack initially along two major axes of advance. However, during the planning phase well prior to line of departure (LD), collecting, reviewing, and disseminating terrain products developed by division and EAD topographic and intelligence organizations became completely overwhelming. Because there was no central management for this information among the several planning headquarters (Central Command (CENTCOM), CFLCC, V Corps, and 3ID [M]), it was hugely challenging for planners to respond to specific request for information (RFIs) for detailed terrain analysis. TACWEB/SIPERNET was used to find products produced by CFLCC or other government agencies (OGA) sources. However, because these data files were so immense and the division had limited bandwidth, they could not download or manage these files effectively. In addition, higher headquarters' terrain products were simply hung on web pages for the division to find and use, without alerting us to new products available. We often received or found information too late to affect the commander's decision-making process.

Recommendation: All such information should be catalogued and made available by the large engineer/intelligence staffs at the corps or land component command (LCC) level. An alternate course of action (COA) would be for the Engineer School to establish a task force that assembles such information when contingency operations spin up, so that this information is available to units via the SIPRNET. Most critically, SIPRNET data capabilities must be tremendously expanded if tactical units at division and below are to be able to access terrain data from a web page. The division must install a large data pipeline at home station to allow passing and receiving the enormous data files from remote headquarter to allow adequate parallel planning.

Chapter 15
Engineer
Topic B - Reception, Staging, Onward Movement and Integration
(RSOI)

Issue: Integration of EAD engineers

Discussion: The engineer brigade integrated seven major and several minor EAD engineer units into the division before LD, as well as changing task organization to lose and gain other EAD assets after arrival at TF Baghdad. This nearly tripled the division's total engineer population for the operation. Every single one of these units brought a non-organic engineer capability to the fight that was essential to the division's success. The four multi-role bridge companies (MRBCs) brought river crossing and assault boat capabilities. The corps' combat battalion brought additional combat engineers critical to support 3-7 Cavalry's scheme of maneuver, division C² capability as the crossing area engineer for the Euphrates River crossing, and the ability to weight the main effort. The 94th Engineer Battalion (Combat Heavy) and the 535th Combat Support Equipment Company brought critically needed road and airfield construction and technical capabilities. The 937th Engineer Group brought the critical C² means to manage the division engineer operations in the division's rear area despite the division's extremely extended battlespace. In order to seamlessly integrate EAD engineer units, the engineer brigade developed an RSOI SOP and checklist, with briefings for key leaders. Issues covered mission essential task list (METL) assessment, recent training calendars, strengths and weaknesses, as well as the many RSOI training requirements established by theater, division, and the brigade. In addition, the brigade held an engineer leader's seminar early in the RSOI process to familiarize all units with the plan, the critical issues they would have to perform, the nature of the terrain, capabilities of the various units attached to the division, and a myriad of TTPs and SOPs the brigade had developed related to our primary focus on delivering "assured mobility" to the division. This seminar also helped establish the personal relationships so necessary to successful operations. Where possible, units also participated in the division command post exercise (CPX) prior to LD.

In general, the integration process was successful. Contact was established with "new" units as early as possible via email or telephone. Face-to-face meetings were executed on arrival, SOPs and training requirements were exchanged, and liaison officers (LNOs) were used extensively at the brigade and battalion level. In the most successful cases, the LNOs arrived prior to the main body. Several limitations made integration a challenge. The physical separation from most EAD units and the engineer brigade (the engineer group and two battalions completed RSOI at Camp Virginia and the multi-role bridge companies at Araifjan) tremendously complicated the planning and RSOI process. SIPRNET was the primary means of communication in the pre-deployment stages, but it proved incapable of passing the large briefing files needed to assist units in planning their operation. Also, there was considerable uncertainty as to unit arrival dates in theater, further complicating planning and the RSOI process.

Even after units arrived in theater and LNOs were exchanged, many EAD units were not attached to the division until very late in the preparation stage. Units assigned to RSOI these EAD engineers were often inadequate to the task (e.g., 416th ENCOM had neither the resources, time, or personnel to RSOI the MRBCs, despite valiant efforts) and lacked the necessary combat equipment and materiel required to outfit the arriving units. Though the units were a part of the division's planning (and in some cases, execution) process, they could not officially answer to the division. Additionally, they were tasked with missions by their corps parent headquarters that in some cases conflicted with the division's missions and requirements. The physical separation of these units from the engineer brigade made establishing support and logistics relationships particularly difficult.

Recommendation: The earlier EAD units can be integrated before LD, the better – at least two full weeks on the ground and ideally a month is needed. A detailed and thorough RSOI process, with focus on the “I” of integration, is essential. Open dialogue between headquarters and commanders prior to deployment must occur. The use of LNOs is extremely helpful, particularly if the LNO can arrive prior to the main body. A function, such as a leader’s seminar, that allows all units to establish common situational awareness is critical. Early on, higher headquarters should establish clear task organization and provide all subordinate units contact names, phone numbers, and email addresses. Finally, to prevent confusion and unnecessary friction and to avoid diverting leaders’ energy away from critical tasks, all headquarters must respect task organization.

Issue: Multi-role bridge company (MRBC) command/support relationships

Discussion: During OIF, MRBCs were task-organized across corps boundaries to several different units throughout the operation, requiring them to address many logistics and administrative issues multiple times with multiple headquarters. When the MRBCs were assigned to various units within the division, it was difficult to maintain continuity of support such as supply and maintenance. MRBCs support changed between forward support battalions (FSBs) as the task organization changed, and they were often too far from the main support battalion (MSB) to receive effective support. Task organization changes, particularly those changes that were not planned or were not executed in accordance with the plan, made this even more of a challenge.

Recommendation: If MRBCs are to be fluidly moved around the battlefield, then the MRBCs need to be as self-sufficient as possible. When assigned to a division, the command/support relationship must be carefully considered and planned in advance. The “support” part of this relationship must be worked very hard.

Chapter 15 Engineer

Topic C - Continuous Offensive Operations Over Extended Distances

Issue: Resourcing the engineer brigade main command post (EMAIN) as separate HQ

Discussion: Contrary to doctrine, the engineer brigade fought almost the entire campaign as a separate entity from the division main command post (DMAIN), and only co-located with the DTAC for the advance to the Euphrates River to conduct the division’s river crossing at OBJ Peach. This afforded additional flexibility to the division’s scheme of maneuver. While BCTs and the DTAC focused on the close fight, the EMAIN controlled numerous forward passages along the narrow divisional axis of advance, rapidly replaced the lead BCT as the crossing area commander at OBJ Peach, and quickly transitioned into Baghdad International Airport (BIA) and, later, Baghdad engineer restoration operations. This could only happen because the EMAIN trained to command and control independently. The EMAIN and its supporting 937th Group Headquarters planned and successfully controlled four divisional forward passages: the border crossing, Highway #1 near An Nasiriyah, the Karbala Gap, and the Euphrates River crossing. The EMAIN also commanded an economy of force action at OBJ Peach for three days with a mechanized task force; portions of the air defense artillery (ADA) battalion; a corps engineer battalion; and an MRBC that focused

on defending the bridge, passing the division forward, traffic control, installing additional bridge crossings, and clearing OBJ Peach of enemy forces. As Baghdad was falling, the engineer brigade managed real estate operations, life support, and force protection at BIA as a forward operating base for multiple division, corps, CFLCC, and interagency organizations. Subsequently, the brigade worked to restore power, water, and sewage utilities to Baghdad as the division transitioned to stability and support operations (SASO) operations. While executing these diverse mission sets, we identified several critical shortfalls in the brigade's MTOE, most notably, the lack of a dedicated S3, S1, and S4 (the S3 is assigned to the DTAC to support the Assistant Division Commander [Maneuver] [ADC-M] and the current fight, while the S1 and S4 are in the division rear command post (DREAR) with the Assistant Division Commander [Support] [(ADC/S)], insufficient independent logistics capabilities (to include a water buffalo), and inadequate communications architecture (no Force XXI battle command brigade and below (FBCB²) was assigned to the EMAIN, only one TACSAT, and a few unreliable Iridium satellite phones and HF radios that could not be maintained).

Recommendation: Revise doctrine to use the engineer brigade as a separate controlling headquarters. To do this, the EMAIN needs additional personnel (especially its own S3, S1, and S4), weapons, communications systems (especially reliable HF radios and FBCB² in all engineer C² nodes), and logistics self-sufficiency for HHD so it can control division operations focused on mobility, forward passages, and transition to SASO with respect to real estate management, and utilities restoration. The engineer brigade should be assigned and should train with a tele-engineer kit allowing reach-back to U.S. Army Corps of Engineers (USACE). Doctrine should identify specific USACE assets to be attached to the engineer brigade for transition to SASO operations, to include prime power experts, real estate managers, and infrastructure experts. The brigade also needs dedicated civil affairs support capabilities in SASO.

Issue: Engineer brigade commander C² capability and survivability

Discussion: The engineer brigade commander formed an "assault CP" with his soft-top HMMWV (which had FBCB² installed and thus could not be changed out for a hard vehicle), plus an excess hard top HMMWV drawn from Army prepositioned stock (APS). A battle captain was in the commander's HMMWV to assist with C² on the move. The additional hard top HMMWV had an NCO and commo specialist, with a squad automatic weapon (SAW) (the hard top HMMWV's ring mount was broken and could not be changed out with a M2 .50 cal machine gun before LD, as desired). In general, this configuration worked well, permitting C² of the brigade on the move. A critical communications shortfall was the lack of an additional TACSAT. With two TACSATs instead of one, the commander could have better controlled the engineer fight on the move while his EMAIN monitored. The lethal nature of the continual direct and indirect contact limited the engineer brigade commander's freedom to move around the battlespace securely. While en route to a blown bridge site, through an area declared "clear" by a Bradley platoon, the assault CP was ambushed by rocket propelled grenades (RPGs), mortars, and direct fire. All of the occupants of commander's HMMWV were injured and only escaped more serious injury or death because the round hit the vehicle's mobile subscriber radio telephone terminal (MSRT).

Recommendation: Engineer brigade commanders must be resourced with more combat capable and survivable C² platforms to permit them the ability to move about the battlefield to the decisive place for engineer operations and to control the close engineer fight. This should ideally consist of a M113 or M2 Bradley and requires the addition of a TACSAT.

Issue: Fighting combat engineers and survivability

Discussion: Engineer combat vehicles are not survivable under the fighting conditions we encountered in OIF. One sapper was killed and three wounded when an RPG round hit a squad M113; in contrast, no RPGs penetrated any of the Bradleys or tanks in 3ID (M), and our maneuver survivability to tenacious attacks is a major lesson of this campaign. On multiple occasions BCT commanders wanted to leave combat engineers behind during an attack because of our lack of survivability, but each time concluded they could not because of the need for responsive combat engineers to reduce possible obstacles forward. Combat engineers must fight forward to execute the wide variety of important combat tasks carried out in this campaign, such as removing obstacles, clearing and marking routes, emplacing a wide variety of expedient obstacles, and providing additional security forces for tasks such as manning blocking positions. In addition to conducting their fundamental sapper tasks focused on assured mobility, on repeated occasions during OIF combat engineer line companies served their task forces as fighting engineers and established enemy prisoners of war (EPW) cages, conducted presence patrols, secured and defended bridges, cleared buildings, and attacked to clear routes. Enemy dismounted forces in buildings and from fortified foxholes viciously attacked our sappers throughout the campaign. Combat engineers responded with devastating effect, firing at enemy forces with crew served weapons, Javelins (one of the most important equipment additions to the force, providing both antiarmor capability and thermal imaging), and fighting from the M113 cargo hatch with small arms. The campaign illustrated the critical requirements for sappers to be able to fight as independent units at and below company level, yet sappers' Engineer Qualification Tables (EQT) do not require them to shoot and maneuver with their main weapons systems (MK-19, M2 .50 cal MG, M249s, and M203s). For those units that had trained extensively in Kuwait before combat, their realistic training proved invaluable. Weapons ranges focused on moving and shooting as opposed to typical small arms targetry. In addition, platoons conducted extensive training on displaced civilians and EPWs. Moreover, military operation on urban terrain (MOUT) training conducted at home station prior to deployment proved crucial in familiarizing sappers with the problems of fighting as infantry in urban terrain. The Standards in Training Commission (STRAC) will need to address these issues to sustain this level of training.

Recommendation: Place combat engineers in a vehicle platform of equal survivability to that of maneuver forces. Completely revamp the current EQT to replicate shoot and move Tables, incorporating mobility tasks with the need to fight while attacking. Maintain this training by introducing into the METL basic infantry training, such as fire control and dismounted infantry operations. Focus training on the quick transitions between engineer and infantry missions. Increase Javelin fielding to one per sapper squad plus one in the assault and obstacle (A&O) platoon for a total of seven per sapper company.

Issue: Assured mobility operations

Discussion: Ever since the division's "Warfighter" exercise in January 2002, the engineer brigade has focused on establishing TTPs to implement the emerging engineer doctrine of assured mobility, that is designed to assure maneuver commanders freedom of maneuver by predicting, preventing, detecting or neutralizing obstacles to mobility on the battlefield. This included an extensive review of commercial off-the-shelf (COTS) countermine equipment to pursue in case of deployment. The focus was on terrain analysis responsibilities, SOPs and TTPs, and changing the

engineer training model and mind set from a focus on demolitions and defensive/mine operations, to a focus on mobility, in concert with our Army's offensively, oriented doctrine. As a result we focused primarily on mobility tasks in preparation for combat, to include route marking and signing and traffic control (not enough military police [MPs] were available to handle both EPW operations, manage traffic, and conduct bridge recons and seizures). Unfortunately, most of the COTS countermine equipment we trained on did not materialize prior to LD, to include the extremely effective Handheld Standoff Mine Detection System (HSTAMIDS). Some COTS equipment included the D9 dozers (used to slice through the border obstacles, as well as for area clearance), the MineLab F1A4 mine detector, the Panther mine clearer, and two tele-engineering kits (TEKs) from USACE. But because we faced relatively few obstacles throughout the campaign, our major mobility tasks were focused on overcoming natural obstacles and difficult roads and terrain, as well as disposing of UXO and enemy weapons and ammunition caches. The notable exceptions to this were two significant minefields and some other "improvised" obstacles. One of the BCTs encountered a 400-meter deep minefield astride Highway 8 north of the junction with Highway 1. This obstacle was covertly breached by sappers in order to execute a mission and was subsequently deliberately breached after being reseeded. Another minefield along Highway 8 (just east of BIA) was 1300 meters deep and required considerable engineer effort to reduce. Additionally, the enemy used unconventional obstacles in several locations, including destroyed vehicles and other expedient roadblocks. Engineers also encountered several partially damaged or destroyed fixed bridges. Of note, even in this rapid offensive campaign, engineers performed many mobility/countermobility/survivability (M/CM/S) tasks, to include:

- High value asset (HVA) survivability positions
- Terrain analysis and product support
- Berming to support road blocks (against suicide and dismounted infantry)
- Non-explosive obstacles such as wire and berms across roads
- Route reconnaissance, first by terrain product, then actual engineer reconnaissance team (ERT) reconnaissance
- Road craters in built-up terrain
- Enemy weapons and ammunition destruction (as well as cache destruction)
- Mine clearing operations: Fortunately, we faced few minefields. The Panther worked very well at area clearance and might be modified to add a mine clearing line charge (MCLIC) on top. This would give us a common chassis that works much better than the trailer-mounted version.
- Route clearing of debris: ACEs are perfect for this mission
- Gap crossing: For hasty crossing the AVLB is great, if you can get it to the battle, but our 30% OR for AVLBs was the worst equipment OR in the entire division. We absolutely must have a major AVLB recapitalization or replacement system for our heavy forces NOW!

Recommendation: The assured mobility concept should be enshrined in doctrine now. Current training emphasis in the training base, at home station, and at CTCs on

emplacing minefields should be dramatically reduced and replaced with an emphasis on assured mobility operations, to include route and bridge reconnaissance, route marking and signing, traffic control at FPOLs, river and gap-crossing, and maneuvering in constricted terrain. This time should be replaced with the “fighting engineer” model discussed separately above. Defensive training should focus on situational obstacles, point minefields, and the kinds of tasks listed above, with a heavy emphasis on road craters (used fairly extensively to contain certain cities during the attack), wire obstacles, and field expedient obstacles and berms to control traffic.

Issue: Bridge seizures and doctrine

Discussion: Because of the constrictive nature of the terrain at the river crossing sites, the division was forced to plan its two potential river crossing operations as brigade-level tasks, rather than true doctrinally deliberate river crossings. Difficult approaches at crossing sites made it essential we cross close to the fixed bridges to facilitate the momentum of the attack. While the preferred river crossing technique was bridge seizure, we found little doctrinal references to bridge seizure TTPs, even a METL task for an airborne unit seizing a bridge presumes the bridge is not prepared for demolition. All the training elements required for this operation exist, but there is no doctrinal framework. In planning seizure of bridges presumed rigged for demolition (all bridges over the Euphrates en route to Baghdad except the Highway 1 bridge near An Nasiriyah were rigged for demolitions, and four of them were blown/partially damaged), we decided an under-side bridge reconnaissance was required to clear bridges prior to passing heavy forces, but our organic ribbon bridge (RB)-3s were inadequate. As a result, at OBJ Peach the engineer company used RB-15s (the only RB in the Army able to mount an outboard motor to allow rapid river crossing under fire) from the MRBC, in conjunction with TF scouts equipped with Long Range Advanced Scout Surveillance System (LRAS) devices and an EOD team to help determine safe ways to clear any demolitions/booby traps under the bridges, to execute the assault river crossing. Bridge classification training aided planning for bridge seizures and enabled execution. The tele-engineering kit (TEK) proved essential to complete technical evaluation of multiple damaged bridges after partial damage to explosives. The TEK’s video teleconference (VTC) capability to instantly transmit digital photographs of the damage allowed us to obtain a field fix to the failing span support, but the scope of work was beyond the resources and mission focus at the time.

Recommendation: Develop engineer doctrine to support seizing a bridge rigged for destruction by the enemy and incorporate this into the division’s METL. Include counter demolition training to support bridge seizure as a focus of EQT and engineer tactical education system. Continue bridge classification training at the current level of emphasis. Replace current MTOE authorization of RB-3s with three RB-15s per engineer battalion, include haul asset for RB-15s in MTOE change. Augment engineer battalions with one TEK per battalion in order to train on its multiple capabilities for advanced technical reconnaissance. Augment engineers with LRAS devices for independent standoff reconnaissance capability.

Issue: River crossings, forward passage of lines (FPOLs), and doctrine

Discussion: During planning, the division applied Army doctrinal river crossing/combined arms breaching control measures as a framework not only for the two river crossings, but also for our several FPOLs. However, FPOL planning took a back seat to other planning efforts, and the FRAGO publishing FPOL control measures, to include a common crossing area frequency, was too late to allow rehearsals and, in

general, lacked the necessary detail to adequately control the units moving through the FPOLs. As a result, the division suffered delays and confusion at its several FPOL operations, largely because units ignored or were unaware of control measures, while engineers and MPs sorted out traffic jams and congestion on the ground.

In addition, the river crossing operations were conceived of as “movements” over the bridge site, rather than true combat operations requiring tactical pauses to maintain the traffic flow and ultimately mission success, resulting in significant delays at the crossing area. During the crossing of OBJ Peach, engineers templated engineer equipment parks and engineer regulating points, but despite this fact, the bridge company arrived at OBJ Peach to find several other units occupying these sites. Also, a considerable amount of traffic blocked access to the river crossing site, precluding crossing site reconnaissance and delaying bank preparation for several hours. The addition of a corps level engineer battalion headquarters (with a combat engineer company and bridge companies) to the crossing area BCT was essential to the success of the river crossing operation. This battalion provided the necessary additional staff and personnel to conduct the detailed and complex planning and execution of a river crossing. A single engineer battalion supporting a BCT would be hard pressed to plan and execute an operation of this magnitude. Once they committed to managing crossing site(s), they would be unable to disengage from the crossing area to support a continuation of the BCT’s attack. In both cases where the division prepared to execute a river crossing, 3ID (M) forces attacked over extended distances (50 km or more) on only fair roads that rapidly deteriorated under maneuver traffic. By the time the following MRBCs passed through, they became mired in soft sand and arrived at the crossing site several hours late. If we had needed to conduct a river crossing, we would have waited a long time for the MRBCs to catch up. Further, we found that time needed (1-2 hour) for bank preparation was much greater than anticipated.

Recommendation: Increase training on river crossing operations and execution of FPOLs at home station and at the CTCs. At every CTC rotation require some type of gap crossing and FPOL exercise to train on river crossing TTPs. Consider doctrinal grouping of FPOL, river crossing, and breaching in a capstone framework using river crossing area control measures as a common reference, to facilitate standardizing these similar tasks. Establish routine training relationships between MRBCs and maneuver units for annual home station training events, linked to a divisional river crossing exercise at least once a year, as well as during every “Warfighter” exercise, to hone the skills necessary for this complex but essential task. The engineer brigade’s river crossing exercise with the USMC’s 8th Engineer Support Battalion at Camp Lejeune, NC should be sustained annually.

Issue: Engineer construction support “modules” for rapid, extended-distance operations

Discussion: The current engineer structure assigns an engineer brigade and three combat engineer battalions to mechanized divisions, augmented in wartime by EAD engineer assets such as construction, bridging, well-drillers, and other specialized units. These additional units gave the division the capability to execute the full range of required wartime engineer tasks, but the numbers of units assigned were inadequate to complete all assigned engineer tasks. The size of the division’s battlespace, the distances covered, and the inadequate number of EAD engineers required careful prioritization of engineer assets. Because of the long distances, rapid tempo, and the inadequate LOC supporting the division’s attack, changing engineer task organization to mass engineer assets against all required tasks was not possible. The engineer brigade developed a set of engineer force “modules” for each engineer task designed to

last for the campaign, with only critical task organization changes designed as part of the plan. Due to the engineer shortage, we task organized based on capabilities, not unit assignment. Hence, different combat heavy construction modules were assigned numerous tasks to accomplish sequentially along their axis of advance, with specified disengagement criteria to ensure time-sensitive tasks were completed. However, the distances quickly out-stripped communications capabilities and, combined with congestion on over-crowded LOCs and insufficient haul, many construction assets did not catch up to their elements until days later. We planned to reconsolidate engineers at OBJ Rams, the one location where the division would stop for a short period of time, ultimately allowing engineer assets to catch up and to re-task organize assets to support critical mission sets such as the Euphrates river crossing. We succeeded in accomplishing assigned tasks by adhering to a strict engineer project/task schedule, by developing engineers force modules to maximize asset allocation to tasks, and by accepting risk by not massing engineer assets on any single project.

Recommendation: Engineer planners must perform a thorough engineer battlefield assessment/“troop to task” analysis of projects, task organize for durability, and develop force modules to maximize engineer asset employment. EAD engineers should be re-designed into more functionally capable modules able to execute discreet mission sets. Centralized logistics haul assets are inadequate for the assigned construction assets and must be assigned to the supported engineer unit.

Issue: Division and corps engineer headquarters struggled with the task organization, command and support relationships, and mission priorities for EAD engineer units

Discussion: The division’s EAD construction assets upon LD consisted of about half of the corps engineer assets in theater, due to force flow. As a result, the division was tasked with executing tasks to support corps requirements, to include clearing Tallil Air Base, and building a unmanned aerial vehicle (UAV) and C-130 airstrip at OBJ Rams/LSA Bushmaster. The engineer brigade planned and prepared for and executed these tasks. During the planning process, the corps engineer work line (CEWL) (typically the division rear boundary or forward) was not clearly specified for the various portions of the operation. The CEWL delineates the area where corps engineer assets execute missions so that divisional assets can focus forward. Several times during operations, the division sent personnel and pieces of equipment well behind the CEWL and the division rear boundary in order to accomplish missions. These tasks were particularly difficult, as they usually took no account of support relationships and requirements, communications ability, coordination for security in the battlespace, or feasibility of execution. During OIF, difficulties arose when engineer headquarters determined a mission requirement, but did not have the resources to execute. Often, based on “home station” command and support relationships, subordinate units were tasked to perform such missions, even though the operational command and support relationship was not the same. In all cases, these tasks pulled the units back and diverted leader energy away from the close fight and the strategic objective of seizing Baghdad. The size of the division’s battlespace and the distances involved between projects made these missions much more challenging. During OIF, it was critically important that key assets meet timelines and move to the proper location at the designated time. There were numerous tertiary impacts caused by “outside” taskings on a unit that already had a specific mission.

Recommendation: Headquarters of all levels should follow established doctrine regarding engineer work lines and not assign tasks to units outside of their battlespace, especially in an engineer-resource constrained environment. This is even more critical

over the extended distances faced in OIF. Furthermore, all headquarters should carefully specify the command and support relationships of subordinate units, and then respect those relationships. Missions required by the higher headquarters should be clearly established prior to the operation, or should at least be published in time for subordinate units to react and execute.

Issue: Critical engineer assets lacked transportation haul to move them forward rapidly

Discussion: There are numerous pieces of engineer construction equipment (graders, scrapers, dozers, etc.) that require haul assets to move from one job-site to another (916/870 or heavy equipment transport [HET]). TF 94E lacked the organic haul assets to upload all of their equipment, and was not able to move all of their equipment at one time, requiring them to either leave equipment behind or to be resourced with additional haul. Because of the size of the division's battlespace and the tendency towards decentralized execution, it was not feasible to make several turns back to the border with the organic trucks. That process would have taken assets out of the fight for several days as trucks went back and forth on congested routes over 200 km long. The division also received four D9 dozers, an exceptional asset that could only be moved about the battlefield on HETS, however the HETs and crews initially assigned to the D9s were pulled in the first week of the operation. In theory, logistics doctrine fulfills this shortfall with EAD haul, but this never materialized. HETs and other haul assets were allocated to other priorities, leaving over twenty pieces of engineer construction equipment back behind the border, never to get into the fight.

Recommendation: The feasibility of our centralized logistics doctrine needs a careful review, as the critical path in almost all supporting operations throughout this fight was haul capability. All engineer units should be resourced to move themselves in one lift. Assets must be resourced at the level from which they come.

Chapter 15

Engineer

Topic D - Transition to SASO

Issue: EOD assets and UXO removal and destruction become particularly important as combat operations ceased.

Discussion: 3ID (M) was assigned one EOD company for this operation in a DS relationship. Though this company was tasked almost to its maximum capability during offensive operations, it was able to sufficiently accomplish its mission when augmented by combat engineers. Once 3ID (M) moved into Baghdad, it became apparent that one EOD company was grossly inadequate to support the division. Ammunition management and removal, as opposed to demolition, was of great concern. Countless weapons caches, combined with densely populated urban areas heavily laden with UXO where explosive disposal was difficult, exacerbated the danger to innocent civilians and proved a heavy burden. Though not specifically trained in UXO destruction procedures, combat engineers were critical to the removal and destruction of UXO and weapons caches. Units could not bypass the caches for fear of allowing enemy forces to go back and police up the weapons to use against us. Nor could they afford to put guards on the caches until an EOD team could make it to the site. Although combat engineers supplementing and augmenting EOD was an essential expedient, this tactic presented

considerable safety concerns. More than once, engineers trying to destroy weapons and ammunition ended up not using enough demolitions or placing it improperly.

Recommendation: Depending on the division's battlespace and number of populated areas, a division must have at least one EOD company for combat operations. As hostilities end and units transition to SASO, they must be augmented with additional EOD support (another company per division), particularly if the division is operating in urban areas. If the Army does not increase the EOD support to divisions, then the EOD and combat engineer communities must develop training doctrine to allow combat engineers to dispose of unexploded ordnance and weapons caches in order to augment inadequate EOD assets. An important component of gaining local populace trust and confidence is to quickly remove the UXO and Class V threat.

Issue: Facilities engineer support critical during transition to SASO

Discussion: Though not formally announced by a cease-fire, once we occupied Baghdad, units began the transition to SASO. Over the course of the war, many components of the national infrastructure especially electricity, water, and sewage utilities were damaged or destroyed. Much of the damage was as a result of looters and vandals in the immediate aftermath of regime fall and all would have to be rebuilt. This was most immediately apparent at BIA). Although this airport and numerous other objectives around Baghdad were specified, the division had been given no plan to occupy the city and transition to SASO. Multiple military and interagency organizations vied to set up operations at BIA, but the BCT controlling BIA was too engaged in continuing combat operations to coordinate this adequately. The division directed the EMAIN to conduct a relief in place (RIP) of its crossing area commander functions at OBJ Peach with the 937th Engineer Group, and the EMAIN took control of BIA operations. After occupation by several thousand soldiers for several days, BIA was on the verge of a sanitation crisis. There was limited space to conduct "normal" field sanitation procedures such as slit trenches and transportation constraints prevented lumber for burn-out latrines to be moved forward. Upon arrival at BIA, the engineer brigade set up a Joint Facilities Utilization Board to manage the real estate and utility needs of each of the multiple tenants, and this forum became the center for all coordinated activity on BIA well after responsibility for BIA transferred to the 937th Engineer Group.

As BIA began to function independently, the security situation in the city calmed and restoring utilities to the over five million residents of Baghdad became an urgent priority. The EMAIN conducted another RIP with the 937th of BIA operations and began to work with local Iraqis to restore city power, water, and sewage utilities. Infrastructure reconstruction was vital to gain the trust and confidence of the locals as a demonstration of our willingness and ability to help restore a safe, secure, and functional urban environment. The brigade directed DS engineer battalions to begin engineer reconnaissance in zone to identify, assess, and repair, if able, Baghdad's utilities. These critical infrastructure nodes were assessed by various elements from the battalions, then at the engineer brigade this information was exchanged at daily engineer fusion cell meetings, where the brigade decided on allocation of priorities and resources. The engineer brigade also coordinated and tracked UXO disposal and Class V removal, as well as force protection, route clearance, and forward operating base living standards for the BCTs.

In coordination with CFLCC's, TF Faijr, which was charged with restoring the power, water, and sewage utilities nationwide, the engineer brigade organized and energized

local Iraqi electrical, water, and sewage authorities to slowly repair and restore damaged utilities. Close cooperation between TF Fajir, a 35 man headquarters, and the engineer brigade was essential as neither unit had adequate resources for their common task of restoring utilities. The two established a combined engineer operations center at Baghdad South, a key city power plant, using the enlisted terminal attack controller (ETAC) and TF Fajir personnel. The engineer brigade provided transportation, communications, topographic analytics, and focused on the details of utilities' status and security. TF Fajir tied in intelligence on the national grid, coordination with the interagency countrywide, worked U.S. government approval issues, funding, and coordination with the Office of Reconstruction and Humanitarian Assistance (ORHA). Close cooperation was especially critical since multiple security issues, such as thieves, vandals, and UXO, prevented access to many of the facilities and transmission lines, and required constant coordination with 3ID (M) and the BCTs to correct. However, starting this process was prolonged and complicated because three major elements (3ID [M], 1st MEF, and 101st ABN Div [-]) occupied different parts of the city, each dealing with separate groups of Iraqis trying to fix the infrastructure. As 3ID (M) consolidated control over the entire city, a vetting process was conducted to bring the various groups together.

In addition to TF Fajir, which provided the most significant capability to energize restoration of utilities, the engineer brigade was aided in this effort by several unique U.S. Army Corps of Engineers elements and capabilities. V Corps sent some prime power experts to help restore power to BIA and a facilities engineer detachment to assist with technical assessment, repair, and coordination in Baghdad. The TEK was used extensively by the 94th Engineer Battalion to get technical "reach back" assistance via VTC from USACE laboratories to repair BIA's back-up generators, conduct bridge damage assessments, and obtain other technical advice. All of this came together less as part of a plan, than as the result of emergency coordination and requests once 3ID (M) was in Baghdad and the critical nature of the requirements was recognized. Of major concern was the designation of authorities to operate Baghdad's system. In the first weeks of the occupation, there was a behind-the-scenes struggle for power among Iraqis at multiple echelons across the city's organizational hierarchy, and 3ID (M) lacked guidance on how and who to recognize. Ongoing struggles for power, establishing security without the benefit of a functioning police system, and re-establishing a pay system for government workers all continue to plague the restoration of "normalcy" to Baghdad.

Recommendation: If the final objective of an operation includes restoring utilities operations to an existing infrastructure, the tactical unit occupying the ground needs to understand the plan and organization that will execute the restoration of utilities within the goal of a safe and secure environment. Technical engineer experts from specialized units such as prime power and facilities teams should be echeloned well forward to begin work as soon as possible. Additionally, higher-level plans and teams designated to rebuild civilian infrastructure need to be clearly established, made known to all units involved, and must be on the ground immediately. This is particularly important for non-military agencies charged with the political authority to make decisions with potentially long-ranging impact, such as designating which personnel we will recognize and work with.

Chapter 15 Engineer

Topic E - Engineer Specific Issues

Issue: Implementing the “fighting 2IC” concept in combat operations

Discussion: In order to facilitate the flow of information on the battlefield between engineer companies and their parent battalion, all of our battalions and companies were encouraged to designate a “fighting 2IC” to assist company and battalion commanders with controlling the fight. Some companies used the A&O platoon leader in this role in addition to the company commander and TOC. Various battalions used different techniques to apply this concept. Some configured the engineer battalion commander’s HMMWV to accommodate the A&O platoon leader who could then monitor both the company and battalion nets. Some battalion commanders placed an officer in their command track to assist with battle tracking, and some had the A&O platoon leader fighting out of a separate track and managing specific nets for the company commander. This technique gave the company commander the same freedom to command and control his elements on the battlefield that maneuver commanders enjoy, while also monitoring commands from the task force commander. The system worked extremely well because the forward-edge battalion command posts (CPs), namely the ACP and TAC, could always contact the 2IC. The 2IC also proved to be a much more reliable source of information than the company TOCs because he was forward with the maneuver forces monitoring actions on the ground.

Recommendation: Continue to develop and utilize this valuable asset while in the offense. Recommend that an additional armored HMMWV or M113 be added to the MTOE for use by the “fighting 2IC” forward on the battlefield.

Issue: Employing and integrating engineer reconnaissance teams (ERT) with task forces

Discussion: An ERT provides enormous advantages by placing engineer expertise well forward of the main body. The ERT can give the commander mobility intelligence of the battlefield so he can make better decisions to maintain offensive momentum. During offensive operations, most ERTs operated almost exclusively with the task forces’ scout platoons to recon routes for possible enemy obstacles. Because we could draw some excess APS HMMWVs, our ERTs contributed greatly to scout effectiveness by allowing for more haul capacity. However, they provided limited engineer intelligence, as the enemy did not significantly obstacle our approaches. In Baghdad, they were consolidated under battalion control to recon utilities in the city. ERTs tremendously aided infrastructure intelligence as the unit focused on restoring utilities to pre-war levels.

Recommendation: The ERT should be added to the MTOE, but needs specific training to be more effective, to include obstacle reporting, bridge reconnaissance, use of the laser range finder, TF scout integration, bridge reconnaissance and assessment, obstacle marking, and route reconnaissance. The ERT should integrate into the TF scout and/or the brigade reconnaissance team (BRT) by spending at least 25% of garrison training time with scouts and conducting FTXs with them. Team stabilization is critical to maximize habitual relationships with TF and BRT and to maintain training level. Also outfit ERT with the LRAS.

Issue: Task organizing Volcano systems in mechanized engineer battalions

Discussion: Two of the three engineer battalions consolidated Volcanos under a platoon leader assigned to the HHC commander because situational Volcano obstacles are typically brigade level or higher targets. Although no Volcano minefields were emplaced during this operation, the Volcano platoon gave the engineer battalion commander a highly flexible asset. Two thirds of our M548s downloaded their Volcanos to make room for extra haul of engineer supplies and equipment, given the unlikely need for a family of scatterable mines (FASCAM) minefield. They also escorted numerous convoys with their crew served weapons, provided command and control and security for discreet dozer missions in zone, and became the nucleus for some units' Baghdad city infrastructure and route reconnaissance operations during transition to SASO. We were fortunate in this campaign to fight an enemy incapable of organizing a coherent attack against us, thanks in large measure to our dominant air power, overwhelming fire superiority, and armored vehicles protecting us from enemy fires. This does not mean we should cast aside our situational obstacle capability, but perhaps make it more flexible and supportable by changing the organization as suggested here, as well as changing the platform. M548s are old, limited in haul capacity, and lightly armored, while HEMTT cargo trucks can complete the Volcano mission with far greater flexibility for the force with greater haul capacity and higher maintenance reliability.

Recommendation: Keep the Volcanos consolidated in platoons at battalion level, and change the MTOE to resource and reflect this, exchanging the unsustainable M548 for HEMTTs. Depending on future combat operation against better-equipped and more capable enemies, we could one day have to fight defensively, and the engineer commander's ability to quickly employ these systems would prove invaluable.

Issue: Maintain field craft and assembly area (AA) operations skills developed during OIF

Discussion: In training on set engineer qualification tables, we have lost valuable training in basic soldier tasks. Field problems focus on the major engineer tasks. Valuable field craft gained in platoon bivouacs and field training exercises have been lost. Platoon sergeants have to train platoon leaders on the fly. We train for NTC, but 90% of our missions whether in combat or peace revolve around assembly area operations, convoys, and field craft. We have now trained ourselves in these areas, and we need to ensure that they remain a training objective when we execute field training.

Recommendation: Once a quarter platoons should complete a 3 to 4 day field training exercise. Assembly area procedures, convoys, and field craft will all remain important training objectives of these events. Platoon sergeants need to serve as the primary platoon trainer for these areas.

Issue: Panther tactics

Discussion: The use of the Panther to clear small areas of mines and UXO, such as at the forward arming and refueling point (FARP) at Jalibah Air Base, was a huge success. The Panther was effectively used for "shock" effect against enemy forces, especially when used at vehicle checkpoints. We used the Panther as an additional armored security vehicle to great success. Even without the main gun turret, the local population respected the Panther.

Recommendation: Continue to use the Panther as an additional armored platform. Adding an armored vehicle-launched MICLIC (AVLM) kit to this vehicle would make it considerably more useful.

Chapter 15
Engineer
Topic F – Command, Control, & Communications

Issue: Engineer long-range communications

Discussion: Engineers were spread across the division's entire battlespace and occasionally behind the division's rear boundary. In some cases this meant that engineer CPs, brigade, group, battalion, and separate company, operated over 300 km apart. Despite a major effort to improve the brigade's long-range communications architecture starting last fall during planning, we received only limited additional assets, to include one Harris radio delivered about three weeks before LD that went non mission capable (NMC) for an antenna coupler twice in the last days before LD. The brigade struggled mightily to get HF radios to work, and while we were able to get over half operational, we were never able to talk over extended range in the green, although we could occasionally talk in the clear. We obtained several Iridium phones useful for commander-to-commander discussions, but they proved largely unreliable. The brigade's one FBCB² was in the commander's HMMWV, and while extremely useful for situational awareness, its messaging capability was intermittent at best. Distances made reporting and battle tracking extremely difficult for the engineer brigade, which often learned of forward engineer actions from BCT commanders' tactical updates. Reporting through engineer channels is critical, as these reports contain more specific and detailed information, allowing the engineer brigade to assemble and track a mobility common operating picture (MCOP) for the division. These reports allow the engineer brigade and division engineer to assess the information, balance it with division requirements, and make informed recommendations and decisions. Additionally, this engineer specific information must be passed to the corps engineer.

By MTOE, the units in engineer brigade have limited long-range communications capabilities. SINCGARS FM radios were used extensively for battalion and below communications, but very rarely could the engineer brigade talk to all of its subordinate units via FM. FM relay extends the range of the FM net, but it only does so in one general direction. Retrans was not a viable option due to the security situation. The MSE network works well when units are stationary, but OPTEMPO precluded mobile subscriber equipment (MSE) for major portions of the operation. The engineer brigade had a single TACSAT radio, enabling the brigade to listen to the division command net. The division engineer could talk to the CG, but he could not always accurately portray the engineer picture and make recommendations because he could not routinely receive reports from and talk to his subordinate commanders. Battlefield circulation proved hazardous as well. FBCB² was another long-range communication system that provided leaders with excellent situational awareness. Unfortunately, there was only one system fielded to the engineer brigade, and most engineers had to rely on borrowing time on their supported maneuver units' systems.

Recommendation: The engineer community needs to be resourced with a more robust communications package designed to allow it to communicate across the division's battlespace. Division engineers need the same capability to talk to engineer battalion commanders as the division commander has to talk to his major subordinate

commanders. If TACSAT is not feasible to use on a larger scale due to bandwidth restrictions, then the Army should aggressively pursue more reliable HF radios that units should train on routinely. Additionally, engineer units need FBCB² fielded to the company commander and XO level.

Issue: FM communication across engineer units

Discussion: During this operation, units were required to conduct numerous convoys over hundreds of kilometers in varying types of terrain and weather. The soldiers and leaders in vehicles during these convoys need to be able to talk to each other to share information on everything from the overall operational situation to the actual conduct of the convoy. In many units, particularly HHCs in the mechanized battalions, and in most other cases in the combat heavy units and MRBCs, FM radios are only authorized in selected leaders' vehicles. All vehicles need the ability to at least communicate within a convoy. Additionally, based on the area covered by this operation and the overall lack of engineer assets, small "packages" of engineer equipment were given missions requiring communications ability – for example, a dozer team tasked to dig in a Patriot battery several dozen kilometers from its headquarters.

Recommendation: FM radio allocation needs to be increased. All combat systems, HMMWVs, and LMTV/5-tons/2 ½ tons need to have a radio.

Issue: Lack of dedicated small extension node (SEN) teams for EAD engineers

Discussion: Because engineer battalions set up their TOCs with habitually associated brigade TOCs, they do not have a need for a dedicated SEN team. However, the division receives EAD engineer assets that are not self sufficient in terms of communication. Several times, the corps mechanized battalion was poised to accomplish a "separate" mission (for example, a crossing site headquarters set up independent of any other C² node), but was hampered by its inability to connect to the MSE network. Although that unit maximized FM communication throughout much of the fight, the lack of a SEN meant that the battalion was oftentimes unable to get critical information from the MSE network – specifically SIPRNET.

Recommendation: Provide separate corps battalions a SEN whenever possible. Attempt to get this asset as a part of the unit prior to reception at the division level.

Issue: Engineer group attached to the division engineer brigade

Discussion: The 937th Engineer Group was a great asset to have on the engineer battlefield. The Group allowed the DIVENG commander to focus on the close tactical fight while the engineer group commander focused on the rear area. Since we fought over extremely extended distances, sometimes stretching beyond the division rear boundary, the group headquarters' complementary C² capability proved essential. This additional C² node allowed the division to have a senior engineer in the rear area focused on main supply route (MSR) maintenance, division support area (DSA) construction, and other general engineering operations.

Recommendation: Keep engineer groups attached to DIVENG during high intensity conflicts.

Chapter 15

Engineer

Topic G - Engineer Equipment Modification Table of Organization and Equipment (MTOE)

Issue: Engineer pacer equipment is old and inadequate for modern combat conditions

Discussion: Pacer equipment for a mechanized engineer battalion consists of the M113A3 squad track, the M60 AVLB, and the M9 ACE.

M113A3. A workhorse vehicle as the combat engineer squad carrier/fighting platform and C² vehicle for all combat engineers, the M113A3 performed well, beginning the campaign at 94% OR and ending the campaign in Baghdad at 83% OR, despite a pathetically low Class IX delivery rate. From a maintenance and functional perspective, it was successful. However, sappers, who must fight alongside or in the immediate vicinity of their maneuver comrades came under heavy fire, yet the M113A3 is the least survivable armored vehicle in the inventory. The M113s offer minimal armor protection from small arms fires and none from RPGs; during this operation Bradley Fighting Vehicles (BFVs) took numerous hits from RPGs without any injuries to occupants, but an RPG strike caused a fatality and three wounded soldiers in an engineer M113. Placing combat engineers in a lesser-armored vehicle is just plain immoral and unconscionable. Engineers executed a wide variety of important combat tasks such as security and manning blocking positions and normally operated in the attack under the same combat conditions as maneuver forces, taking severe direct fire contact from small arms and numerous RPGs. To support front-line combat units, engineers must have a more survivable combat platform. Additionally, the M113s do not have thermal sight capability that forces engineers to scan exposed using the naked eye, binoculars, or night vision goggles (NVGs).

AVLB. The AVLB was a critical component of campaign planning, and drew great interest from division leaders, since it would allow the rapid spanning of small gaps in the numerous canals, streams, wadis, and roads along the narrowly defined attack corridor the division used. Thanks to the incoherence of Iraqi defenses, we only had to place 13 AVLB bridges to pass forces during the campaign, but that number turned out to be nearly all of our final available AVLB chassis when we arrived in Baghdad. The AVLB fleet started the campaign at 94% operational readiness (OR), but that rate dropped precipitously and immediately upon LD and has stabilized at 28% (14/51) in Baghdad. The low OR rate caused numerous problems for the engineer line companies, specifically speed of movement, recoverability, and maintenance reliability. During convoys, the AVLBs could not keep pace with maneuver units and were often left behind or abandoned when they broke down and could not be recovered. Across the division, engineers had to leave behind twenty one AVLBs during the movement from the border to Baghdad, all due to mechanical failures, and none to enemy fire or as a result of extreme environmental temperatures or conditions. Lastly, the M88 is not capable of recovering the AVLB and bridge by itself, requiring an empty AVLB chassis or prime mover/lowboy and M88 to recover the entire system.

ACE. The ACE proved to be very versatile. The APS fleet delivered well maintained equipment and we had general success keeping it operational despite an almost complete lack of Class IX. The mission set focused on mobility and we used the ACE in countless berm reductions, debris removal operations, to fill a gap in a major highway bridge line of communication (LOC), to recover tanks from canals, to fill in enemy fighting positions, to breach enemy berms and tank ditches, and to push up a variety of

expedient obstacles in urban combat to guard lateral routes into areas of operations. As the operation reached its conclusion, the lack of Class IX began to take a toll on the OR rate. However, the demand for the equipment in mobility and SASO is high. There is a need for an armored, mobile earthmover. The one-man crew was problematic in this operation due to the distances traveled. Designating, training, and using alternate operators, mainly for movement, mitigated this problem. However, the ACE was not capable of the significant earthmoving operations such as were required at the international border. EAD dozer assets reduced this problem, but the great demand for dozers meant receiving dozer support was problematic in this rapid offensive operation. Survivability work was easily completed by D7s (and D9s) more efficiently and effectively than ACEs, especially in regions of Iraq where the soil did not consist primarily of sand. Dozers are difficult to move due to their haul requirements, but a mixture of dozers and ACEs worked best during OIF. Dozers concentrated on survivability while the ACEs executed mobility tasks.

Mine Clearing Line Charge (MICLIC). During a mine obstacle reduction on Highway 8 near the Baghdad Airport, the 11th Engineer Battalion successfully fired a MICLIC rocket and charge, but the MICLIC had no significant effect on the high-density, surface laid, blast resistant minefield of VS 1.6 Italian antitank mines that had to be cleared using ACEs, dozers, and manually. The worldwide proliferation of blast resistant mines and the "skip zone" make the MICLIC irrelevant against modern mine systems.

Recommendation: M113A3s should be replaced with Bradleys immediately. The AVLB recapitalization program should be fully funded now or replaced with the Wolverine or other system. ACEs should be retained, perhaps increased to 10 per company, and their improvement programs should be fully funded. Dozers should be included with every combat engineer battalion for combat operations and the MICLIC should be replaced with a system capable of reducing blast-resistant mines.

Issue: Organic maintenance recovery capabilities

Discussion: The divisional engineer battalion is not resourced and organized to provide forward maintenance and recovery support to task organized companies during rapid offensive operations over extended distances. The current heavy divisional engineer battalion TOE centralizes organizational maintenance at the battalion level, augmented with a direct support maintenance support team (MST) from the supported maneuver BCT. Engineer companies frequently operated in support of maneuver task forces across distances that did not allow the engineer battalion's maintenance organization to provide effective support from a single consolidated location. Maintenance contact teams, consisting of a sergeant with 5-7 mechanics and a contact truck were task organized with companies. However, critical resources like recovery, more senior (SSG and above) supervision, and other capabilities were not authorized in sufficient quantities to provide them independently for each company in the battalion. The engineer direct support MST from the FSB is also not resourced to support forward under this scenario. In essence, the operational design, speed, and tempo of this campaign forced us to decentralize a maintenance organization that is not resourced to operate effectively decentralized. When battalions were forced to move decentralized during an attack of over 3 days and 500 km, AVLBs and ACEs suffered a maintenance attrition rate up to 50%. In most cases, this equipment had to be left in unsecured territory because the resources to rapidly recover and repair it on the move were insufficient and separated by too much distance. Maneuver task forces lack the expertise and resources to adequately support engineer maintenance.

Recommendation: If this campaign is a harbinger of future war, heavy divisional engineer battalion tables of organization and equipment (TOEs) should be resourced to provide an independent organizational maintenance capability for each line company and the HHC. Additionally, the HHC should have some capability to augment this more robust organizational maintenance with recovery in order to assist in evacuating engineer equipment to a central location for DS maintenance support. Some of the key components of that organization are listed below. Additionally, a separate battalion level staff officer, maintenance technician, and motor sergeant to provide oversight and staff level maintenance management should be authorized under the engineer battalion administrative/logistics operations center (ALOC).

Battalion Staff	HHC	Engineer Company x 3
Battalion Maintenance Officer	Company Motor Sergeant (SFC)	Company Motor Sergeant (SFC)
Battalion Maintenance Technician	ULLS-G w/92A20	ULLS-G w/92A20
Battalion Motor Sergeant	Vehicle w/storage for PLL	Vehicle w/storage for PLL
2xHMMWVs and Operators	Contact truck	Contact truck
	HEMTT recovery vehicle	Tracked recovery vehicle
	Tracked recovery vehicle	

Issue: Tele-engineering kit (TEK)

Discussion: The corps mechanized engineer battalion that supported the division brought with it a tele-engineering kit. This kit enabled engineers to take pictures and video of “engineer problems” such as damaged bridge and broken generators and send those back to the Corps of Engineers. Engineers could receive suggestions on how to fix problems and could even teleconference with engineer experts to discuss the problems or issues. This kit proved invaluable, particularly in restoring the power, water, and other infrastructure problems when the division occupied Baghdad Airport.

Recommendation: An absolute bare minimum of two of these kits should be fielded to each divisional engineer brigade, preferably one per combat engineer battalion. The additional capability to leverage the entire 35,000 man U.S. Army Corps of Engineers via reach-back technology brings incredibly increased capability to the forward engineer to quickly solve technical problems with field solutions he can have confidence are structurally sound.

Issue: Divisional engineer need for Level I combat health support (CHS) (battalion aid station)

Discussion: Divisional combat engineer battalions do not have a battalion aid station with Level I CHS capabilities. The engineer battalions are often task organized with additional EAD engineers and required to move and operate as an independent element. Task Force and BCT assets become overwhelmed as more units get task organized to them during operations. Divisional engineers need to have a Level I CHS capability if they are expected to provide medical support to EAD units task organized to them. Additionally, there are no organic field litter ambulances (FLAs) in an engineer battalion. In a high intensity combat (HIC) environment, with tenacious Fedayeen forces attacking us on all sides constantly, the soft-skinned PSG and 1SG HMMWVs are inappropriate casualty evacuation (CASEVAC) vehicles.

Recommendation: Divisional engineer battalions should be authorized a PA, additional enlisted medical personnel, and appropriate equipment (to include an FLA) to provide Level I CHS (a battalion aid station) in order to support EAD and organic engineer units task organized under engineer battalion control.

Issue: MTOE changes to support mechanized engineer battalion HHC C²

Discussion: Engineer battalions typically become the C² headquarters for combat support units task organized to the BCT. Since the line companies are task organized to TFs, these platoon or smaller-sized units typically fall under the control of the HHC commander. In some instances during this operation, engineer HHCs controlled the BCT's decon platoons, MPs, and other EAD engineer elements in addition to the support platoon, maintenance platoon, and the Volcano platoon. One engineer HHC was given the mission to secure the BCT's forward surgical team. Given the reality that HHC will execute a variety of missions to support both the engineer battalion and the BCT, its MTOE must be adjusted to address this requirement to C² additional forces. These changes include positions for a company XO and operations SGT, a vehicle for the XO/company CP, additional crew served weapons, and additional radios.

Recommendation: MTOE should authorize positions for the XO and a 12B30/40 for an operations NCO. The company headquarters needs either a cargo HMMWV with M101 trailer or a light medium tactical vehicle (LMTV) with one long-range and one short-range radio to carry equipment needed to run the company CP. The MTOE should also include a 10kw generator to power the HHC CP.

Issue: D9 dozer

DISCUSSION: DURING OPERATION Iraqi Freedom, the U.S. Army employed the D9R armored dozer for the first time in combat. The D9 dozer sustained two mine strikes with only minimal damage, as well as small arms fire with no injury to the crew. The CAT-made dozer was very dependable and the air conditioning and heater made desert

operations possible year round. The cab design with two seats proved to be a wise choice in terms of providing a package where 24-hour operations are sustainable for some period of time. Finally, the total power and size of the dozer proved itself to be an outstanding resource for any mobility, countermobility, or survivability mission. The HET is the only trailer in the army inventory capable of hauling the D9 because of its weight of 62 tons, but because of the high demand for HETs the D9s often could not be hauled, and were unable to provide responsive support without dedicated HETs. Due to this fact, there were a few instances where the dozer and crew were stranded without transportation. More commonly, the D9 could not be used to its full potential because we lacked transportation to haul it where required.

Recommendation: Field this piece of equipment across the engineer regiment. Combat heavy battalions should receive 4 D9s and combat support equipment companies should receive 2. The D9 “system” should include the D9, a HET, a crew-served weapon, and a radio.

Chapter 15

Engineer

Topic H - Logistics

Issue: Vehicle recovery assets/planning inadequate

Discussion: During a continuous movement of over 250 km, engineer equipment (mainly AVLBs and ACEs) became NMC at a rate far above battalion and BCT recovery capabilities. In some units this problem was compounded by the task organization of engineers and the order of march. Maneuver units could typically sustain a faster pace and stopped less frequently for maintenance. ACEs, and especially AVLBs, repeatedly overheated or broke down, and fell out of the formations in unsecured territory. Engineer battalions are not authorized sufficient recovery assets to provide an element to each company. The lack of recovery resources was further compounded by the poor performance of M88 tracked recovery vehicles. These vehicles, similar to the AVLBs, had to stop frequently or face overheating and other mechanical problems. Self-recovery by like vehicles was used to some extent, but frequently resulted in another NMC AVLB or ACE. In addition, each BCT and separate unit had different plans for dealing with broken equipment. Some units left the vehicle and drove on. Others took a grid location of the broken vehicle and left it. Others took parts from the “abandoned” equipment, rendering it further unserviceable. During the extended pause at OBJ Rams, there was no consolidated effort to police up broken equipment, partly from concern with the security situation along LOCs, partly because units were consumed with combat operations, and partly out of inertia.

Recommendation: Clear recovery guidance that accounts for security and other recovery requirements must be published and rehearsed as part of a separate, coherent divisional plan prior to LD. Units must know what to do with inoperative vehicles and the decision authority for leaving them. In addition, the Army absolutely MUST fund the AVLB recap program. By the time the division attacked Baghdad, the overall AVLB OR was at 30% (compared to the next lowest OR of engineer equipment, the ACE at 70%).

Issue: Class IV planning and movement

Discussion: Though the ordering, packaging, and delivery of construction and barrier material, Class IV, is clearly a logistics function, engineers must estimate the initial requirements for quantities needed. Because of the link between engineers and Class IV, it is often difficult to see a shortage of Class IV as a logistics issue and not an engineer issue. In this campaign the engineers invested considerable effort to order and manage Class IV, but due to lack of theater (logistic) support assets, the division's engineers coordinated the construction of 120 each 463L pallets of Class IV combat configured loads (CCLs) with assistance from the Division Materiel Management Center (DMMC). Engineers made a huge effort to build the Class IV CCLs and developed a synch matrix with corresponding transportation requests for theater throughput. Organic divisional units cannot rely on unit basic load (UBL) alone to sustain engineer barrier and force protection requirements. Once the division crossed LD, theater assets to transport Class IV materials proved inadequate. Units quickly consumed their Class IV UBL both in planned and un-projected missions including additional EPW holding facilities. Engineers were unable to use Class IV to exploit opportunities (barrier material around Karbala for 3rd BCT) because no Class IV was available. Additionally, the division got very little help from higher headquarters in efforts to contract and purchase both common national stock number (NSN) Class IV materials and unique engineer construction Class IV (i.e. geotextile, mobi-matting, and Hesco bastions), although the ADE identified quantities of these materials as early as 05 NOV. 03.

Recommendation: All headquarters need to do a complete Class IV estimate for support of all operations. This estimate needs to be given to the S4/G4/C4 early in the planning process to ensure proper quantities of materials will be available in theater for allocation to engineer forces and using units. Planners and logisticians must continue to work together to ensure that identified needs actually get ordered and pushed to units. Engineer and logistics planners should develop a plan to resource units that are included in operations. Logistics planners need to incorporate realistic estimates for pushing forward ALL classes of supply and ensure that proper transportation resources are available to resupply subordinate units.

Issue: Organizational Class IX repair parts and Class IIIP

Discussion: During OIF, "just-in-time" logistics did not work. The supply system failed to provide engineer Class IX repair parts, critical Class IIIP, and Class IX batteries, in any significant quantity, both before and during operations, up to the occupation of Baghdad. Engineers must return to a robust, demand supported, Class IX prescribed load list (PLL) if we are to have any hope of maintaining what is, on average, the oldest and most maintenance intensive fleets in the Army (M113, M48, and M60 AVLB Chassis, M548, MICLIC) during rapid offensive operations over extended distances. During the first 21 days of OIF, requisitioning repair parts was a difficult process, and very few parts actually arrived. The Army's current supply system failed before and during the operation. As bad as this problem was for the division, it was even worse for the EAD engineer units. Had some units not "cheated" the system and developed a robust unauthorized PLL prior to LD they would not have succeeded in staying combat effective.

Recommendation: Engineer units should return to robust Class IX PLLs and resource heavy divisional engineer battalion MTOEs to manage, store, and transport this PLL at company level in a configuration that allows easy access and use on the move. This requires an Unit Level Logistics System – Ground (ULLS-G) with 92A10 and a cargo

vehicle that allows for the storage, organization, and easy access to a robust Class IX PLL.

Chapter 16 Air Defense

Chapter Contents

Introduction/Lessons Learned

Topic A - Force Modifications and Modification Tables of Organization and Equipment (MTOE) Changes

Topic B – Air Defense Artillery (ADA) in the Non-Air Defense Role

Topic C - Personnel and Logistic Support

Topic D - Command and Control

Introduction

Since October 2002, 1-3 Air Defense Artillery (ADA) deployed battery-sized elements in support of Operations DESERT SPRING and INTRINSIC ACTION. Initially, C/1-3 ADA deployed in support of 3rd Brigade Combat Team (BCT) in March 2002 for a six-month deployment followed in October 2002 by a relief in place by 2nd BCT supported by B/1-3 ADA. As the turmoil with Iraq escalated during the fall and winter of 2002, the rest of the battalion deployed by section and battery elements until the entire battalion closed on Kuwait in January 2003. This phased deployment began in November 2002 with part of the air and missile defense coordination (AMDCOORD) section deploying as part of the reinforced division tactical command post (DTAC [+]) that initially supported the VICTORY WARRIOR and LUCKY WARRIOR command post exercises (CPXs). The DTAC (+) eventually remained in Kuwait until hostilities broke out. While in Kuwait, the AMDCOORD supported the DTAC (+) and the division main command post (DMAIN [-]) as they finalized the MARNE COBRA operation plan (OPLAN), conducted mounted CPXs during each BCT-level live fire exercise (LFX), coordinated the arrival of the rest of the division, and provided command and control (C²) to the division as it arrived in country and conducted individual and collective training. The rest of the battalion received its deployment order in December 2002 and closed on Kuwait on 23 January 2003. The battalion then prepared and rehearsed the operation for over two months until hostilities broke out on 20 March 2003. During Operation IRAQI FREEDOM, the battalion initially provided short-range air defense protection by defending the division's high value assets (HVAs) and priority of effort until the enemy air threat was defeated by offensive counter-air. Once the enemy air threat was defeated, the battalion's mission changed as it provided security to the division's lines of communication (LOCs), escorted corps and division HVAs, set up blocking positions to destroy enemy ground attacks, conducted screen and clearing missions, and defended Baghdad International Airport from enemy terrorist attacks. After hostilities subsided and as the division switched from high intensity conflict (HIC) to stability and support operations (SASO), the battalion compiled a number of comments and lessons learned. Those comments are presented in this chapter.

Lessons Learned

- The existing system to receive tactical ballistic missile (TBM) early warning (EW) must be streamlined and tested so divisions conducting continuous offensive operations can receive digital early EW.
- The division's air defense battalion, along with all the other separate commands, need communications equipment that can assist the commander in commanding and controlling his/her unit throughout the depth and width of the division's battlespace.
- Though a step in the right direction, the Air and Missile Defense Work Station (AMDWS) and forward area air defense command, control, communication, and intelligence (FAADC³I) systems need further development; they are unable to communicate with the other Army tactical command and control systems (ATCCS) and are too fragile to operate during extended combat operations.
- The air defense battalion's equipment needs to be upgraded to the most current models made available to the rest of the division.
- The distribution of 10-ton cargo heavy expanded mobility tactical trucks (HEMMTs) needs to be re-evaluated throughout the battalion.
- Anti-fratricide equipment issued to the BCTs needs to be fielded to the air defense battalion at the same time
- The division's air defense battalion has outstanding weapon systems and radars that can be used to help command the battalion and provide limited security while it provides air defense coverage against the enemy air threat.
- Redundancy needs to be built into the pay system as many of our soldiers have had pay problems throughout the operation
- The air defense battalion has greater success tracking personnel accountability and casualty evacuation than if the BCTs assume that responsibility
- Positioning a responsible soldier from the battalion's personnel administration center (PAC) in the rear detachment to act on personnel issues proved advantageous to the battalion
- The requisitioning and shipping of FAADC³I peculiar parts needs to be re-evaluated since the present system does not support a unit conducting combat operations
- Divisional air defense forces tend to not have priority of logistics support and needs to plan accordingly
- The Army prepositioned stock (APS) draw grid is outdated and does not support units that have already gone through some force modernization; either the APS stock must be updated or units must ship all the modern equipment from home station
- During continuous offensive operations, moving the AMDCOORD section and the air battle management operations center (ABMOC) forward can prove advantageous to the commander as he provides command and control to the battalion and shared early warning (SEW) to the division

- The air defense battalion S-2 is a critical member of the division's intelligence community and is able to assist in both target acquisition and targeting
 - The ADA synchronization rock drill is an invaluable tool to synchronize the air defense concept of support in support of the division's scheme of maneuver
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Chapter 16 Air Defense

Topic A - Force Modification and Modification Table of Organization and Equipment (MTOE) Changes

Early Warning

Issue: Failure to receive tactical ballistic missile (TBM) early warning (EW) through LINK-16 and mobile subscriber equipment (MSE) network.

Discussion: When Iraq launched the first TBMs against Kuwait City and the 101st Air Assault division's assembly area on G-1, the division received no TBM EW via the LINK-16 and MSE network. Though we had a great tactical digital information link (TADIL)-J/Link 16 connection throughout the battle and regularly tracked well over 100 aircraft simultaneously, we were not able to receive any TBM EW digitally. In fact, the only TBM EW we received throughout the battle was by monitoring the Air Force EW tactical satellite (TACSAT) network.

There are only two ways the division can receive digital TBM EW through the Air and Missile Defense Work Station (AMDWS) system: 1) directly from an Air Defense System Integrator (ADSI) and, 2) from another AMDWS that is hooked directly into an ADSI via MSE. Both have their shortfalls. First, the MSE based system required an MSE feed that was never stable and could not provide EW to AMDWS while on the move. Second, even though a TADIL-J feed can be received on the move and does not require MSE support, the relative short flight time of the missiles the enemy used and the time it took for joint tactical ground station (JTAGS) to identify and release the information through the Joint Tactical Information Distribution System (JTIDS) network resulted in no TBM EW information to be distributed via TADIL-J.

Recommendation: The Army must invest in additional software and hardware improvements that would shorten the time it takes to process TBM EW information and release it to the units.

Issue: Building redundancy in the way the division receives SEW

Discussion: During Operation IRAQI FREEDOM (OIF), the division received digital SEW via TADIL-J/Link 16 communication networks. Though the system worked well, the division was at risk because it had only two J-TIDS radios, an almost one million dollar system with no available replacement. Long operational distances negated any possible redundancy the two radios could have provided. When one JTIDS radio went down for any reason, roughly half of the division went without SEW until the communications link was re-established.

There are a number of possible solutions to this problem. First, technology is available to receive the same TADIL-J/Link 16 SEW through TACSAT, a system that is more abundant and costs less to field and maintain than a JTIDS radio. In order to use TACSAT as the primary means to pass SEW, FAADC³¹ system software and hardware must also be upgraded to be able to pass the information through that medium. This would also mean that the battalion must be fielded two TACSAT radios at each download site: one to monitor communications between the joint interface control officer (JICO), area air defense coordinator and the sector air defense commander as required to enter the operations task link (OPSTASKLINK) and one to receive the SEW.

Another means to receive digital SEW is through Link-11 and 11B. To do this, the battalion would need to be fielded KG-40, KG-84, or MXP-512P systems. This would provide the battalions a second network that it can tap into to receive SEWS, thus building redundancy and dependability into this vital intelligence tool.

Regardless on how the SEW is received; redundancy must be built into the system by providing more than just two radios to monitor one network for the entire division.

Recommendation: The air defense battalion be fielded with a backup system to the two JTIDS radio it now owns to receive SEW, whether it be with additional PSC-5 TACSAT radios with the corresponding software and hardware upgrades to the FAADC³¹ system, or additional KG-40, KG-84, or MXP-512P systems to receive SEW via Link-11.

Communications

Issue: Division command via TACSAT.

Discussion: From the time we destroyed the enemy's observation posts on the international border to the division's closure on OBJ LIONS, the battlespace was so dispersed in width and depth that FM communications between any units larger than infantry or armor battalion/task force-sized elements was unfeasible. BCTs were often more than 40 kilometers apart, forcing the division command to conduct all command and control functions via TACSAT. Though extremely effective in allowing the BCTs to communicate with each other and with the division over great distances, many of the other division assets were left in the dark because they did not have the ability to monitor the network. Though the air defense battalion commander and his tactical operations center (TOC) had one TACSAT radio each to monitor the division command network, the battalion was not able to monitor any of the other TACSAT networks, such as division operations and intelligence (O&I), fire support, etc.

The battalion also experienced the same problems the division had in trying to communicate through the depth and width of the division's battlespace. Though it has the same communication requirements in terms of distance and number of networks as the division, the battalion was not allocated any resources to improve its ability to communicate internally. Though the battalion has a number of PRC-213 HF radios by MTOE, these radios are supposed to be used to pass SEW information and are unreliable at best. Although the division did receive some PRC-150 Harris HF radios that proved to be more reliable, only one was given to the battalion, hardly enough to assist it in conducting command and control within the unit.

TACSAT radios proved reliable throughout the operation for the division. The same resources need to be provided to the division's subordinate commands that have much the same requirements.

Recommendation: TACSAT radios need to be provided to the battalion and each battery so all battalion-level networks can be established as per our doctrine. If TACSAT radios are not available, then PRC-150 Harris HF radios must be fielded to replace these same networks.

Issue: The battalion does not have a Force XXI battle command brigade and below (FBCB²) required for battle tracking.

Discussion: The division fielded FBCB² as the standard for blue force tracking. The ADA battalion was not included in the fielding. During combat operations, the battalion had to locate an FBCB² on the battlefield to get situational awareness. Even this was limited since none of the air defense assets were displayed on the FBCB² screen.

None only did the lack of FBCB² systems in the battalion hinder situational awareness, all division fragmentary orders (FRAGOs) and graphics were issued over FBCB², making it difficult for the battalion to track the battle and conduct simultaneous planning in support of the division.

Recommendation: At a minimum, issue one FBCB² terminal to each battery, the battalion TOC, and the battalion commander; also ensure that each air defense weapon and radar system is displayed on the FBCB² screen.

FAADC³I and AMDWS

Issue: Software compatibility of AMDWS with the other ATCCS.

Discussion: During operational planning and execution, the battalion is required to provide the division a current air picture superimposed over the current airspace control measures (ACMs). On demand, the division's leadership may also request that maneuver graphics be projected so that they can see where aircraft are in relation to the ground forces. Currently, these products are manually input into AMDWS by either the Army airspace command and control (A²C²) or air battle management operations center (ABMOC) operators, a slow and tedious process. These operators are duplicating the efforts of other operators who are entering the same graphic control measures into the Maneuver Control System (MCS), Advanced Field Artillery Tactical Data System (AFATDS), and the other ATCCSs.

Recommendation: Make the required software and hardware upgrades so AMDWS can communicate with the other ATCCSs so all the different graphic control measures can be uploaded via floppy disk or through the local area network (LAN).

Issue: Equipment and products for FAADC³I systems should be versatile and durable

Discussion: A number of the current FAADC³I components weigh in excess of three hundred pounds and are large and bulky, limiting the space both for transporting the parts forward and finding areas to install them. The commercial over the counter

(COTS) equipment is also not reliable after being transported over rough terrain. During Operation IRAQI FREEDOM, several of the battalion's hard drives were damaged during the move, making them unusable when they were installed to replace damaged or non mission capable (NMC) components.

Recommendation: Convert existing hardware packages to more versatile and durable hardware systems; the existing software can run on smaller laptop-sized computer systems, thus facilitating transportation and storage requirements.

Vehicle Support

Issue: Adequate armor protection for air defense battalion and battery leadership during offensive combat operations

Discussion: During OIF, the battalion was able to draw additional Bradleys from the Army pre-positioned stock (APS) draw grid and use them as command and control vehicles (C²V) for the battalion and battery leadership. This enabled each commander to maneuver forward and provide the necessary command and control to air defense assets in contact with the enemy. They were able to survive the numerous artillery and mortar attacks the division received as well as provide additional firepower to protect the leadership when needed. Currently this freedom to maneuver is not available to air defense commanders who ride through the diverse battlefield in soft-top highly mobile multipurpose wheeled vehicles (HMMWVs). Air defense counterparts within the division should have the same armor platform as division and brigade commanders.

Recommendation: M2 Bradleys should be authorized for Linebacker battery commanders, the battalion S3, and the battalion commander.

Issue: Upgrade the battalion fleet of M1068A2s

Discussion: The availability of parts for the battalion's aging fleet of M1068A2s makes sustainment of combat readiness problematic. Additionally, the M1068A2 cannot effectively sustain the speeds and maneuverability necessary to maneuver with the BCTs who are outfitted with newer, more powerful equipment.

Recommendation: Upgrade the battalion's M1068A2 fleet to the A3 model, C²V, or similar armored command and control platform.

Issue: Use of the air defense battery ten-ton cargo HEMTT

Discussion: Presently, ten-ton cargo HEMTTs are authorized by MTOE to the division's air defense battalion to haul ammunition only. By MTOE, they are assigned to each battery's ammunition section. However, the air defense leadership realized that the enemy air threat would not be substantial during Operation IRAQI FREEDOM and did not draw the entire basic load of Stinger missiles. This gave the battery commander's another asset to haul equipment forward during the division's attack into Iraq.

A number of the batteries found that their ammunition HEMTTs were better utilized if they were assigned to the battery maintenance sections. The batteries were able to haul their ammunition basic loads using the organic 2-½ ton-hauling assets and utilized their 10-ton cargo HEMTTs to support their organic maintenance hauling requirements. This shift was necessitated by the lack of "drop-sided" loading capability of the drawn

M35A2s and the actual cargo requirements of the Class V basic loads. By shifting these assets within their organizations, batteries were able to benefit from the cargo crane on each HEMTT to lift heavy Class IX parts, haul the drawn ISU-90 or quadcon containers that held their PLL and/or tool sets, and self-recover any NMC trailers in some cases.

Recommendation: If the enemy does not have a substantial air threat, redistribute the battalion's 10-ton HEMTTs from the battery ammunition section to the battery maintenance section.

Issue: Only Linebacker batteries are authorized 10-ton cargo HEMTTs, while the missile battery and HHBs are not.

Discussion: Ten-ton cargo HEMTTs proved their value to the battalion in several ways. Due to the limited logistical support capabilities that the battalion experienced during this operation, each battery that had HEMTTs was able to carry more of the spare parts, tools, and other equipment necessary to remain self-sufficient for a longer period of time. Plus, the tremendous hauling capability of these vehicles offered more flexibility to battery commanders in their battery CSS plans in support of their operations. HHB/1-3 ADA was fortunate to draw from APS a cargo HEMTT before this operation began, though they are not authorized one by MTOE. This piece of equipment proved essential in supporting the battery commander's tasks of supporting his battery and the battalion as a whole. D/1-3 ADA did not draw a HEMTT and, at times, suffered from the lack of necessary cargo capacity. A HEMTT would have transported their prescribed load list (PLL) container, carried more Class IX parts acquired before the movement into Iraq, and provided an internal crane asset. All of these capabilities greatly benefitted the HHB commander, as well as the commanders for A, B, and C batteries.

Recommendation: Divisional ADA battalion MTOEs should authorize a 10-ton cargo HEMTT for the missile (D) battery as well as the HHB.

Issue: The fielding of Phoenix lights, combat identification panels (CIP), and tactical identification panels (TIPs).

Discussion: As the division prepared to conduct offensive combat operation, it fielded a number of systems to help with identifying friendly ground assets and to limit the chance for fratricide. All proved to be successful during OIF. Phoenix lights, easy to see from kilometers away with NVGs, reduced friendly breaks in contact and fratricide and enhanced friendly link-up operations, passage of lines, and visibility in severe weather. One of our crews reported that fratricide incidents were avoided because they had been able to observe the length of the entire convoy ahead of them as it rounded a curve beyond where the vehicle itself could be seen. At one point, several of the supported units requested that we turn the Phoenix lights off, stating the enemy could observe them with their own NVGs.

CIPs and TIPs also assisted in identification of friendly combat units; however, the battalion was not a priority in receiving these systems. Due to the nature of how an air defense unit fights and deploys on the battlefield, it is essential that these combat systems also be fielded these ID panels

Recommendation: Continue the use of Phoenix lights against any enemy known to possess extremely limited NVG capability and standardize the issue of CIPs and TIPs to units who do not deploy on the battlefield in unit formation.

Chapter 16

Air Defense

Topic B – Air Defense Artillery (ADA) in the Non-Air Defense Role

Issue: Use of AMDWS to assist with monitoring the division's A²C² effort.

Discussion: Since the Tactical Airspace Integration System (TAIS) was never operational, the AMDWS system, with input from the division's Sentinels and the TADIL-J feed, served as the only way the division leadership could monitor the use of airspace within our battlespace. The division leadership was able to monitor the passage of friendly aircraft through the division's airspace as well as track our own aviation brigade assets as they targeted the enemy within range of our radar systems.

Recommendation: Continue to use AMDWS as a backup system to TAIS to track friendly aircraft movement when it does not compromise the Sentinels primary mission of identifying the enemy air threat forward of the division's immediate battlespace.

Issue: Use of ADA weapon systems to provide ground security of the division's high value assets (HVAs)

Discussion: The division effectively employed ADA systems in weighting the main effort prior to ensuring air supremacy/elimination of enemy air threats. Additionally, employing the ADA battalion in nonstandard roles to secure LOCs and protect HVAs was a noteworthy success in preserving maneuver combat power. However, the loss of Avenger assets to the BCTs transferred excessive risk to the BCT C² nodes. For most BCT TOC/TAC formations, the Avenger is the principle security asset both on the move and once positioned. Loss of these assets mandated depleting combat power within BCT formations.

Recommendation: Sustain effective employment of our superb ADA weapon systems in multiple roles. Recognize the lack of inherent security resident in our MTOE for BCT C² nodes and the impact of withdrawing Avenger platforms from the BCT task organization.

Chapter 16

Air Defense

Topic C - Personnel and Logistic Support

Personnel

Issue: Correct processing of pay and allowances

Discussion: Too many soldiers did not receive their allowances in a timely manner. To insure soldiers are receiving the correct allowances, finance needs to synchronize soldier information with manifests. Soldiers experienced delays in benefits of more than sixty days even though the S-1 marked multiple queries of the system.

Recommendation: Cross level information between airplane manifests and soldiers entered into the pay system for theater specific allowances; build redundancy into the pay system.

Issue: Conducting day-to-day personnel transactions during combat operations.

Discussion: Since all personnel automation systems are Internet driven, conducting day-to-day operations such as promotions and finance were very difficult once the battalion pushed north into Iraq.

3rd SSB was almost completely ineffective since all personnel actions requiring Internet access had to go through Doha. On important issues that required detailed coordination and possibly phone calls to other units stateside, the only way to make progress was by contacting the battalion's rear detachment.

We were able to operate the PAC without any problem with five personnel (including the adjutant). That enabled us to leave one of our personnel administration center (PAC) soldiers in the rear detachment to support the soldiers located there and also to make personnel transactions and run down issues that we could not affect from our location. The communication was sometimes an issue, but it was very beneficial for the battalion to have a PAC soldier back at Fort Stewart.

Recommendation: Be prepared to conduct day-to-day personnel transactions by communicating with S-1 personnel located with the rear detachment.

Issue: Area coverage of unit ministry teams (UMTs) throughout the division's battlespace.

Discussion: Current doctrine dictates that UMTs supporting the separate battalions be held in reserve with their respective headquarters until needed. During this operation, the division chaplain in coordination with the BCT chaplains repositioned the separate UMTs with units most likely to face resistance. Repositioning UMTs enabled excellent religious and pastoral coverage to units in direct contact.

Recommendations: In coordination with BCTs chaplains and commanders, the division chaplain should position separate battalion UMTs forward on the battlefield.

Logistics

Issue: Inadequate FAADC³ contractor support and Class IX availability and delivery.

Discussion: Because many of the FAAD/STC/Sentinel parts were under contractor control through the Contractor Logistics System (CLS), our ability to sustain combat power for Linebackers, Avengers, and Sentinels was problematic. The battalion had to rely upon telephone calls to CONUS and the use of FEDEX to secure and ship parts.

Recommendation: The battalion experienced problems with the FAADC³ equipment and worked with civilian contractors to fix the problems. Some of the problems can and would have been fixed locally, if the necessary parts were available. Currently, the only

contract support within theater is at Camp Doha, Kuwait, and they could not support the battalion once hostilities began.

Recommendation: Battalion needs to stock an authorized stockage list (ASL) from the Project Office for FAADC³I equipment (video cards, network cards, etc.).

Issue: Priority of logistics support during equipment fielding and train-up operations.

Discussion: Division agencies focused all of their priorities of support on the BCTs for logistics initiatives. Whether it was priority of effort for fixing APS shortages, cell phone distribution, non-tactical vehicle (NTV) allocations, or initial issue of newly fielded equipment, it all went to the BCTs first. This negatively affected 1-3 ADA. There were several supply issues that were not resolved in theater because we were never a high priority.

Recommendation: In the future, divisional air defense battalions must deploy as prepared as possible from home station because support will most likely not be available for the division's separate battalions.

Issue: Priority of logistics support during the operation.

Discussion: While task organized with the brigade combat teams, 1-3 ADA units received adequate service and support. Once the division returned all of the subordinate batteries under the control of 1-3 ADA, the division's concept of support did not meet the demands of the battalion. The concept of support was sound. Support for all classes of supply and any required direct support maintenance would come from the 703rd MSB. All necessary coordination was made in advance with main support battalion (MSB) personnel, and the battalion's internal support systems made the necessary adjustments for the concept to operate. However, from the on-set of the battalion's consolidated mission requirements, the devised plan performed poorly. The reason the plan did not function was because the units that were considered "division troops" were low on the division's support priority list. 1-3 ADA had to resort to non-standard requisition procedures in order to receive Class II, Class III, Class VI, and Class IX items. If the battalion's combat service support (CSS) personnel did not meet with the different commodity managers face-to-face and resubmit a manual requisition at that time, then the few supplies that were attained would have gone to the BCTs. There seemed to be no guidance given to the commodity managers to accommodate the requisitions and requirements of the units gaining support solely from the MSB. 1-3 ADA understood and agreed that the priority had to be the units decisively engaged with the enemy, and they were also aware of the overall pain the division was experiencing on all logistical issues. There were shortages across the board and measures needed to be taken by the MSB to accommodate, however, cutting-out support to lower priority units completely was not the best solution.

Recommendation: A future plan needs to take into consideration the needs of all the main support battalion's (MSB) customers (forward support battalion [FSBs], division troops, etc.), and allocate the limited supplies accordingly. This would better support those units not gaining support from an FSB. If implementing a plan like this would be too difficult, then direct 1-3 ADA to receive support from an FSB.

Issue: Lack of unit basic load of essential batteries in combat operations.

Discussion: Mission essential batteries were not on hand after units

depleted their basic loads. The mission essential batteries are BA 5590, BA 5800, BA 5567, and BA 3058. HHB deployed with a 15-day supply of all essential batteries but once HHB tried to replenish their UBL, batteries had a backorder status of at least a month. This could have adversely affected the unit's ability to sustain operations.

Recommendation: Division support command (DISCOM) should maintain a five-day supply of mission essential batteries.

Issue: Shortage of NBC Equipment

Discussion: Due to the limitations across the division, more than half of the battalion deployed with some type of nuclear, biological, and chemical (NBC) equipment shortage such as: joint service lightweight integrated service technology (JSLIST) suits, second skins for the protective mask, and over boots. There were shortages in boots sizes greater than size 12 and JSLIST shortage in the large-long sizes. The battalion was able to cross-level to correct some of the shortages, but we were forced to go outside the battalion to several other units to gather as much as possible to fix dead-lined mask and other critical NBC items.

Recommendation: Each battery in the battalion needs to keep a ten percent overage of all critical NBC equipment at all times.

Issue: Lack of training JSLIST suits

Discussion: The battalion was only provided two training JSLIST suits for training. Our battalion consists of 538 soldiers and made JSLIST familiarization and training problematic.

Recommendation: Field additional JSLIST suits for future training.

APS Draw

Issue: Lack of MTOE-authorized equipment in the APS draw.

Discussion: The current APS draw is designed to provide equipment for a BSFV/Stinger battalion instead of the current Linebacker/Avenger battalion. Because of this, the division had a difficult time in gaining permission to ship the majority of the battalion's equipment. If the battalion did not ship its home station equipment, the division would not have had the real-time SEW picture as provided by the Sentinels and the FAADC³I infrastructure organic to the battalion. The battalion does not have the personnel to man the old Bradley Stinger Fight Vehicle (BSFV)/Stinger battalion MTOE and would have been forced to field fewer combat systems than with the Linebacker/Avenger battalion MTOE.

Recommendation: The APS grids worldwide must be updated to reflect the MTOE of the unit most likely to draw that equipment.

Issue: Comparing capabilities of available APS draw equipment versus home station equipment.

Discussion: Pre-deployment capability analysis was done on ADA combat systems that led to the decision to deploy M6 Linebackers instead of relying on the available draw M2 BSFVs, but this was not thoroughly done on cargo assets. At Fort Stewart, batteries have light medium tactical vehicles (LMTVs) to serve as primary haulers of supplies and equipment, but in the APS fleet, our batteries had to rely on M35A2 "Deuce-and-a-halves." Though both assets can haul approximately two-and-a-half tons of cargo, LMTVs have an increased cargo capacity because they are "drop-sided". This makes them much easier to load and gives them the capability to haul the APS-issued integrated sight unit (ISU)-90s for battery PLL and tool kits.

Recommendation: Thoroughly analyze and compare all types of equipment when researching the cost-benefit of draw equipment versus deploying home station equipment.

Issue: Composition of the divisional air defense battalion's advanced party (ADVON).

Discussion: The battalion faced a dilemma in early January regarding how to best manage the remainder of the deployment and how to best support ADVON requirements occurring simultaneously. To support this situation, 1-3 ADA decided to keep the S4 at Fort Stewart to manage the rest of the deployment. Batteries were given insufficient allocation within the BCTs and therefore suffered during the APS draw process. This combination left no battalion presence on the ground in Doha to coordinate the battalion's ADVON activities.

Recommendation: Ensure a dedicated three-personnel presence from the battalion S4 section and two-personnel from each of battery accompany each ADVON during all future battalion-level deployments.

Chapter 16

Air Defense

Topic D - Command and Control

Issue: Moving the Air Defense Coordinator (ADCOORD) forward with the DTAC.

Discussion: During the initial DTAC CPX held December 2002, the Assistant Division Commander (Maneuver) (ADC [M]) validated the need for more AMDCOORD personnel to accompany him in the DTAC. His vision was that the DTAC had to be self-sufficient since the DMAIN would be located so far in the rear and might become a non-player. As a result, the ADCOORD MAJ moved forward along with one company grade officer, two NCOs, and one enlisted soldier. The section was assigned a station in the INTEL C²V where the section positioned an AMDWS terminal/EO box and had access to one SINCGARS radio when the vehicle was at the halt. The section also had indirect access to an MCS terminal, an AFATDS terminal, FBCB², a Harris AM radio, and a TACSAT communications system.

Once the division offensive operations commenced, the DTAC assumed all responsibilities for both current operations and planning future operations. Due to the

extreme distances the division traveled, the DMAIN was never able to completely take over future operations from the DTAC until after hostilities terminated. Therefore, the advantages to having the ADCOORD forward with the DTAC were numerous. First, with the battalion TOC collocated with the DMAIN, the ADCOORD section assumed duties as an extension of the battalion's TAC and assisted the battalion commander with managing the air defense fight forward. Secondly, this allowed increased situational awareness on the battlefield between the battalion TAC and TOC due to the ADCOORD's indirect access to all the ATCCS systems and FBCB². Finally, since the majority of the division FRAGOs were developed in the DTAC once hostilities began, this allowed the ADCOORD to conduct mission analysis and recommend suitable courses of action to the battalion commander during the fight.

Recommendation: Given the likelihood of greater distances in the division battlespace for future conflicts, the battalion TOC is not in a position to communicate directly with the air defense elements protecting the main effort, the ADCOORD should continue to move forward with the DTAC to assist the battalion in managing the air defense fight as well as fulfill his more traditional role as the division's air defense planner.

Issue: Moving the ABMOC forward with the DTAC.

Discussion: During the mission analysis phase of the military decision-making process (MDMP), the battalion leadership realized that the battalion SOP of having the A²C² collocate with the DMAIN and the ABMOC collocated with the BN TOC needed to be changed, since both headquarters would be within a kilometer of each other. This would mean that no forward area air defense (FAAD) integration node would be positioned forward to help provide early warning to the maneuver brigades. Therefore, the battalion leadership made the decision to move the ABMOC forward with the DTAC so that it could facilitate the distribution of SEW to the lead brigades while the A²C² shelter would collocate with the battalion TOC and provide SEW to the division's assets in the rear.

Recommendation: The battalion needs to revise the battalion tactical standing operating procedures (TSOP) so the ABMOC and the A²C² shelters are not located in the same area on the battlefield.

Issue: Attendance at the division targeting meeting.

Discussion: Due to the ADA battalion's unique position as a separate combat arms battalion, the S2's attendance at the divisional targeting meeting was extremely helpful. The air defense battalion usually sends a member of the ADCOORD section to the meeting and this needs to continue. However, an S2 representative will ensure that enemy air, surface-to surface (SSM), and airfield targets are also considered.

Recommendation: The divisional air defense battalion S2 should attend all division targeting working group meetings.

Issue: Inclusion of Sentinel radars in division collection plan.

Discussion: The division collection plan initially did not take into consideration the air defense battalion's Sentinel radars. Once these assets were added to the division collection plan, they were tasked to collect on named areas of interest (NAIs) that were beyond the capabilities of the system.

The intelligence battlefield operating system (IBOS) synchronization meeting was an attempt to fix collection issues such as this one, however the synchronization meeting needed to be shorter, better organized, and better focused in order to be effective. Also, the IBOS Synchronization Conference needs to be better organized and should occur after a working draft of the division collection plan has been published and staffed through the G2/S2 channels.

Recommendation: The division's collection manager should consider all BOS elements when drafting the collection plan in order to maximize the division's intelligence, surveillance, reconnaissance (ISR) capabilities.

Issue: The need for Patriot liaison officers (LNOs) to be attached to the battalion during operations plan (OPLAN) development.

Discussion: Patriot LNOs must be part of the development of the division plan from its conception. Patriot LNOs provide the expertise for TBM planning that is not inherent to a divisional air defense battalion. The LNOs also provide situational awareness back to the ADA brigade and corps air defense element (CADE) section on the division operations and can assist with Patriot TBM future planning.

Recommendation: Request two Patriot LNOs from the supported ADA brigade as soon as OPLAN development is approved.

Issue: ADA synchronization "rock drill."

Discussion: A synchronization "rock drill" conducted with all air and missile defense (AMD) units operating within the division battlespace was essential to provide situational understanding of the overall maneuver and ADA plan. Making a large-scale terrain board that can accommodate all players was essential. Each "player" can stand on the map or terrain board and brief his task and purpose by phase. This greatly assisted the commander and staff to visualize the battlefield and commanders' intent before combat operations.

Recommendation: Conduct ADA synchronization "rock drill" using a large terrain board or full-scale map; ensure the supporting Patriot commander and LNOs attend and participate to ensure the overall plan is nested with the commanders' intent.

Chapter 17 Communications

Chapter Contents

Introduction/ Lessons Learned

Topic A - Signal Plans/Operations

Topic B - Frequency Management

Topic C – Communications Security (COMSEC)

Topic D - Electronic Enablers

Topic E - Tactical Radio Systems

Introduction

The Third Infantry Division (Mechanized) (3ID [M]) successfully communicated over non-doctrinal distances while on the move, not only through the systems and procedures that were in place, but also by fielding new equipment, integrating available communications technology, and developing tactics, techniques, and procedures (TTPs) to resolve issues that arose during planning for Operation IRAQI FREEDOM.

The division successfully executed their mission with several small command post (CP) configurations. Two of these smaller, more mobile CPs included M4 command and control vehicles (C²Vs) equipped with multiple types of single channel radios, a small-pipe on-the-move International Maritime Satellite (INMARSAT) data connection, and external connections for more robust data networking at the halt. For any fight in the immediate future, command posts should maximize the use of these or similar vehicles. The division's future communications will require a more mobile, capable, modernized system to better facilitate the command and control requirement it will have for future conflicts. It must not merely become an upgraded version of what has been used in the past, but a new system that can support Army Battle Command System (ABCS) connectivity requirements and be integrated seamlessly into each of the several vehicles at a command post, either directly, or by extension from an "access node" vehicle. The purpose of this section is to address this requirement and detail other communications issues that the division signal office has faced and continues to face in order to properly support future operations.

Lessons Learned

- Mobile subscriber equipment (MSE) cannot support the on-the-move requirements of a division conducting continuous operations moving all its elements over extended distances. A new communications system is required that is capable of providing voice and data connectivity throughout the division, over extended distances, and while on the move,.

- The Army must support its units with assured access to satellite systems, particularly 25 kHz single channel tactical satellite (SC TACSAT) channel, both during operations and training. “Train as you fight.”
 - G6 relies on green-tab support to emphasize the need for SC TACSAT bandwidth in future operation. It is usually the corps commander who determines priority for bandwidth, not the corps G6.
 - Task organization of remote radio access units (RAUs) with units that are within line of sight (LOS) range of its parent node center facilitates needed mobile subscriber radiotelephone (MSRT) coverage and force protection for the RAU.
 - G6 will be successful in maintaining a phone and computer-wiring standard only if divisional command posts (CPs) maintain a standard tactical operations center (TOC) configuration.
 - Units must have a better idea of their frequency requirements that can be passed to the G6 for validation and resolution.
 - The division must have a readily accessible pool of MSE frequencies that are either pre-coordinated and deconflicted or can be allocated by a higher headquarters frequency manager that is in proximity to the division.
 - Communications security (COMSEC) standing operating procedures (SOPs) must be re-validated, rehearsed, and distributed to all echelons to ensure that units know the proper procedures for drawing COMSEC and executing compromise plans.
 - Bulk transfer of keys via the mobile subscriber equipment (MSE) network is an effective battlefield alternative to normal data transfer device (DTD)-to-DTD distribution when constrained by long distances.
 - The Iridium phone is an effective tool in providing hand-held secure commercial satellite communications. Its shortcomings are in its difficulty of use and reliability.
 - The INMARSAT was able to demonstrate its effectiveness in providing limited voice and data connectivity to C²Vs on the move, but was fielded too late to provide 3ID (M) with any use.
 - There is a greater requirement within the division for satellite TV than previously stated. Research the possibility of providing brigade combat team (BCT) tactical operations centers (TOCs) with satellite receivers.
 - 3ID (M) needs more SC TACSAT radios, even if operating only off of three nets, in order to provide necessary radios to unforecasted slice elements/requirements and BCTs as replacements.
 - In the absence of a quick erect antenna mast system (QEAMS), units must develop TTPs for field-expedient quick-erecting antennas.
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Chapter 17

Communications Topic A - Signal Plans/Operations

Signal Planning

Issue: Future communications system

Discussion: The division signal battalion is equipped with MSE – and while our signal battalion is highly proficient with the equipment and developed innovative techniques to get the absolute best service out of it, it is not possible to operate MSE nodes while on the move. It cannot be upgraded or modified to be made able to operate that way. Current “digitized” division signal battalions have more modern equipment, but it is likewise limited and incapable of operation while on-the-move. Therefore a new on-the-move communication system is required. This system must be capable of providing connectivity for voice and data over extended distances and while on the move. This system must be designed to provide access to that connectivity to every unit in the division, down to company team level. At the division’s future small, mobile command posts, the vehicle(s) providing that connectivity must be just as mobile and survivable as the rest of the command post; and the communications planners, systems engineers, and operators aboard must have the same situational awareness and access to all the division’s C² means as the rest of the division’s elements.

During OIF, the division acquired and outfitted three M4 C² vehicles (C²Vs). Each C²V was outfitted with a tailored communications package including FM, HF, Enhanced Position Location Reporting System (EPLRS), and TACSAT radios, Iridium phones, Force XXI battle command brigade and below, blue force tracking (FBCB²-BFT), an INMARSAT data connection, and external connections for more robust data and phone connectivity via MSE, at the halt. The single channel TACSAT, FBCB², and Iridium served to provide a minimal C² on-the-move capability, but the Inmarsat data connection was not used and the MSE capabilities were only there at the halt. To explain this further: First, the INMARSAT capability was fielded at the last minute; we got the last of the required parts installed literally on the day we crossed the border into Iraq. The system was not fully functional until after we reached attack positions north of An Najaf. Secondly, since the whole division was on the move and only the air control point (ACP) and division tactical command post (DTAC) were equipped with this capability, it could do nothing to enhance 3ID (M)’s ability to C² the division. It could only have facilitated the corps commander’s ability to provide information and orders to the division. In future systems, this capability will have to be fielded throughout the division enabling C² systems and other battlefield operating systems (BOS) access to a data communications channel while on the move. Future C²V-like systems should also provide more than the 64kbps bandwidth of the Inmarsat to connect interoperable C² systems like All Source Analysis System (ASAS), Air and Missile Defense Work Station (AMDWS), Advanced Field Artillery Tactical Data System (AFATDS), and Automated Deep Operations Coordination System (ADOCS), not just FBCB².

Since the on-the-move C² capability hinges on access to satellites, the Army must also ensure units can gain access to satellites for training as well as operations. “Train as you fight” will mean resourcing training with satellite access. The Army has been saving money by cramming five 5 kHz channels into the bandwidth of a single 25 kHz channel and packing even more nets into that space with demand assigned multiple access (DAMA) technology, but the reality is that the quality of the 5 kHz channels is simply inadequate and the delay experienced with DAMA makes the use of the net too slow to be of any real utility. This “savings” may have allowed us to rationalize a smaller

“requirement” for the number of satellites needed aloft, but the reality is that only a satellite accessible at a look angle of over 40 degrees above the horizon will enable on-the-move operation with current radio equipment. We need more satellites in every theater to ensure access to the right satellite, at the right angle, in a wideband mode.

The soldiers of 3ID (M) spent the last year, the last six months in particular, analyzing the requirements of operation in the OIF environment, developing capabilities and TTPs to overcome the anticipated challenges. We documented our requirements, acquired available equipment, integrated systems, and conducted training to develop TTPs. We were not able to acquire everything we needed, but we got a minimum on-the-move C² capability, and integrated what was available. Through OIF, our requirement for on-the-move long-range communications in the right vehicular packaging has been validated. The soldiers of 3ID (M) are best postured to host an Army level effort to continue development of this type of capability.

Recommendation: Obtain Army support for 3ID (M) to continue efforts to develop on-the-move communications capabilities on adequate vehicular platforms. Continue in 3ID (M) with development of small mobile command posts with integrated on-the-move long-haul communications systems and interoperable automation systems for every BOS. Obtain Army support for expansion of the Army satellite communications capability, particularly for SC TACSAT and ensure satellite access availability for training,

Issue: Lessons learned with MSE

Discussion: While MSE cannot support the division with on-the-move capabilities, it was all we had to support the majority of the division’s requirements. We had insufficient SC TACSAT, FBCB², and Iridium on-the-move capabilities to equip every unit. We could not even come close to equipping them with everything they needed. Consequently, we had to use MSE to augment our sparse and under-capable on-the-move systems. Through a deliberate analysis and planning process, the division’s G6 and the 123rd Signal Battalion were able to take several steps that helped make MSE more successful for 3ID (M) in the “at the halt” communications it was designed for:

Task organize company teams with multichannel TACSAT, node center and retrans teams to resource each BCT, enabling the BCT S6 and signal company commander to determine the best way to employ and protect assets in the BCT battlespace to the mutual advantage of the division network and the BCT.

Task organize EPLRS net control stations (NCS) and gateway teams with the ADA batteries since the ADA units are the only active users of EPLRS needlines in the division.

Augmentation from higher headquarters: We received one additional node center and three small extension nodes (SENs) from XVIII Airborne Corps; one additional SEN from V Corps; two additional TSC-93 multichannel TACSAT terminals and three high gain satellite antennas (2 x 20’ dishes, 1 x 8’ dish w/ “L3 Mod”) from 11th Signal Brigade (Coalition Forces Land Component Command [CFLCC]).

The division collocated the battalion TOC and its system control center (SYSCON) with the division G6 section at the division main command post (DMAIN) to form a division

network operations and security center (DNOSC). This eliminated redundant work effort normally performed in both sections and it improved information flow between the signal community and the division staff. A similar but smaller forward DNOSC and battalion tactical command post (TAC) was formed at the DTAC. This enabled C² of signal elements supporting the BCTs and other parts of the division in forward enclaves.

These and other notes will be addressed in more detail in a 123rd Signal Battalion AAR, to be published separately. Units may gain some utility from these ideas, but they should continue to strive to get MSE replaced at the earliest opportunity.

Recommendation: While continuing the effort to develop a replacement capability and equip all the units in the division, apply these lessons to the use of MSE under similar conditions.

Issue: Remote RAU support of DIVARTY.

Discussion: The division signal battalion attached a remote RAU team (RR62) to division artillery (DIVARTY) for OIF. This arrangement came about because the DIVARTY was scheduled to operate in the vicinity of the division tactical command post (DTAC) (supported by NC 62) for most of the operation and if a remote RAU traveled with DIVARTY, its RAU coverage could be extended almost immediately. The concept worked out precisely as thought, and RR62 established the first remote RAU site inside Iraq from within the DIVARTY perimeter. Finally, the addition of a remote RAU team meant that DIVARTY had dedicated personnel to troubleshoot MSRTs and ensure that they functioned. DIVARTY also provided force protection for the remote RAU, which the signal battalion would have otherwise have had to arrange through special coordination.

Recommendation: Continue to identify opportunities to arrange the task organization of remote RAUs to units within LOS of a node center. This will ensure that MSRTs are still employed as a mobile form of access to the MSE voice network. Ensure that enough MSE frequency pairs are available to support the extension link to the RAU.

CP Communication Support

Issue: DMAIN did not have an established phone-wiring standard, and the D/G6 had to create a phone wiring plan each time the DMAIN changed its configuration. Division must establish a standard.

Discussion: The DMAIN did not have an established phone-wiring standard, and the D/G6 had to create a phone wiring plan each time the DMAIN changed its configuration. The standard should include habitual SEN and wire placement. A different network plan should be created for each possible variation of the DMAIN to include red and amber TOC and different deployable rapid assembly shelter (DRASH) configurations. Subordinate units must affiliate phones and must notify the division which phones will be affiliated based on which TOC is being established. We must update the baseline divisional phone book to include numbers for which we have habitually used spares.

Recommendation: Division should publish updated layouts for each configuration for the DMAIN, DREAR, DTAC, and ACP. G6 should then use these layouts to annotate where each phone will go and how it will be wired. Be prepared for both less and more

subscribers than originally planned. G6 must also work to create a phone book in which red, amber, and green TOC configuration phone numbers are represented. Units must continue to inform the division of the phone numbers they are using when operational. This may imply an addition to a standard divisional reporting requirement.

Chapter 17

Communications

Topic B - Frequency Management

Issue: Limited frequency supportability for SC TACSAT radios.

Discussion: Due to the vast number of requests for SC TACSAT nets, Central Command (CENTCOM) provided the Coalition Forces Land Component Commander (CFLCC) with limited satellite bandwidth. V Corps only received two 25 kHz frequencies initially and did not provide 3ID (M) with a 25 kHz net at first. 3ID (M) used a 5 kHz net initially shared with CFLCC, and then gained sole usage of a 5 kHz channel. In both instances, the quality of communications was sub par, with about half of voice communications being unintelligible. The division did not receive a 25 kHz channel until just after it had initiated combat operations. This greatly improved the capability of division communications, as well as the ability to command and control the division. When the corps first received its own 25 kHz channel, it did not seem to operate with improved quality. We discovered that the corps was operating on a wideband channel, but it was still using the advanced narrow band digital voice terminal (ANDVT) mode of operation (designed for narrowband – 5 kHz channels). We asked them to switch to Vinson mode (designed for wideband) and this resulted in much clearer comms. The division was also allocated a 5 kHz division fires net and, just prior to crossing the line of departure (LD), received a 5 kHz operations and intelligence (O&I) channel.

Recommendation: The division should continue to expect a necessity for green-tab emphasis on the acquisition of SC TACSAT bandwidth due to the limited availability of frequencies and the fierce competition for capabilities. As the division is required to travel over greater distances and fight on a non-linear, non-contiguous battlefield, the requirement for long-range communications will grow proportionally. Brigades must be provided either greater density of SC TACSAT radios (and therefore more TACSAT channels) or an alternate long-range communications system in greater density to satisfy their requirements.

Issue: MSE frequency planning

Discussion. During the planning phase of the operation, the division requested a block of MSE frequencies to deconflict and assign internal to the division using the expertise of assigned frequency management specialists in each battalion command post. Division's requests conflicted with V Corps desire to centrally control and assign every MSE frequency in the MSE network throughout the theater. The corps' approach had the definite advantage of preventing more interference between systems, but even when the division and corps network controllers were located close to one another in Kuwait, the 22nd Signal Brigade frequency manager could not provide timely support to frequency management requests from the division. Certainly, that relationship would not work to support the division in the attack. The division even proposed the establishment of local frequency management zones around Tallil Airbase (An Nasiriyah), Objective RAMS (An Najaf), and the Karbala Gap to Objective Peach near

the river-crossing site. Since the 3ID (M) would be the first combat formation to arrive in the area, our forward network control element would cover frequency deconfliction for all units in the area until the 22nd Signal Brigade frequency manager could do it. 123rd Signal Battalion held the position that a frequency manager had to physically be located in an area in order to be effective and be able to manage frequencies while on the move or when supported only by FM radio, for example. Corps did not formally support this idea although the 123rd Signal Battalion was forced to execute it by default.

At Baghdad International Airport, we experienced three incidents of interference between the band I MSE frequencies given to us by V Corps in Kuwait and SC TACSAT nets (division command, CFLCC command, TF-20). This highlighted the need to bring a theater frequency manager into the area to deconflict the increasing requirements in the area.

Recommendation. Frequency managers must balance the need for centralized control with the reality of a decentralized execution. We do not have time (or sometimes even the means) to request and receive frequency assignments from a corps level command post back in Kuwait for elements installing links in central Iraq. Either dedicated frequency pools for each division or pre-assigned frequencies for each system are required to support MSE in the offense.

Issue: There was a lack of spare FM net identifiers (IDs) based on the massive number of slice elements that were task organized to the division

Discussion: The division frequency manager deploys with a rollup of what net IDs the division operates on. They then request the frequencies from those numbers. Units had been sending up requests for additional net IDs that were not available. The division operates on 699 net IDs (300-999). In garrison we have (10) spare frequencies to play with; over here we had less. During the build up and occupation of Iraq, we were authorized to use additional net IDs not normally slated for use in the division to give the G6 the flexibility to accommodate unit requests. Once we return to CONUS the division will still have its original distribution of 699 net IDs.

Recommendation: Units must scrub their organizations net requirements and send a detailed list up to the G6. The same net IDs used for training should be used for fighting. Units must forecast in advance

Issue: Unforecasted HF frequency requirements

Discussion: The division frequency manager coordinated for a frequency pool initially upon arrival in theater. After receipt of the joint communications electronic operating instructions (JCEOI), the frequency manager received numerous requests for HF radio frequencies for use by military police (MPs), psychological operations (PSYOPS), and division cavalry. The division was unable to initially fill all requirements but was able to request for and receive additional frequencies. This may not always be the case.

Recommendation: There should be a standard number of frequencies the G6 requests for each unit. For example: Each BCT knows that at a minimum they will ask for "X" frequencies for that unit. If HF frequencies are limited, there should also be an order of merit (OML) that outlines the priority for frequency support

Issue: Frequency hopping

Discussion: All division FM nets utilized the frequency-hopping feature of the SINCGARS SIP radio during OIF. This was done, not out of an analysis of the enemy electronic warfare (EW) capability, but rather because of SOP. Had the division opted, instead, to use the SC secure mode of the radio, then options such as channel scanning would have been available, increasing the total number of nets that a station could monitor.

Recommendation: Conduct a deliberate assessment of enemy electronic warfare (EW) capability to determine if it might be an acceptable risk to operate in the single channel mode rather than frequency hopping. This would normally elevate the likelihood that the enemy could use EW against us by intercept, jamming, and direction finding, and thus the enemy's ability to exploit our communications and target our command posts. However, if the enemy has no such capability, it is not a risk. Employ our equipment in the mode that best suits the enemy threat.

Chapter 17

Communications

Topic C – Communications Security (COMSEC)

Issue. Communications security (COMSEC) changeover and the impact on operations

Discussion. COMSEC keys have different effective time periods based on the type of system, the classification of information being passed over it, and the likelihood of compromise. COMSEC suppression and changeover occurs at fixed times (weekly, monthly) that are not synchronized to tactical operations. As has been done in many prior operations, the 3ID (M) requested permission to freeze applicable COMSEC at LD to prevent loss of communications. Although the request was denied, the CFLCC authorized an early change to COMSEC key on most systems prior to LD, in order to mitigate the impact of changing. The division changed all COMSEC keys just days before LD. As part of this changeover, the signal battalion executed an effective rekey of the MSE network. During combat operations, units reported possible compromises where tactical action destroyed equipment and the COMSEC fill device was not positively identified as having been zeroed or destroyed. In these cases, the COMSEC controlling authority directed an immediate emergency suppression of the COMSEC keys. The fight did not stop so we could all change the COMSEC in our radios. As the division was engaged in decisive combat against the Republican Guard, V Corps changed COMSEC as directed by higher headquarters but authorized the 3ID (M) to remain on the superseded COMSEC key until the tactical situation allowed the redistribution of the new COMSEC key. Supporting V Corps elements (artillery, aviation) also remained on the superseded key since they were engaged in direct support of the division. Due to the threat of ambush against soft skin vehicles and attacks on helicopters, there was no safe way to transfer electronic COMSEC key. The division G6 worked with the signal battalion to leverage the MSE node center's ability to transfer key to another node center to pass the single-channel voice key forward from the DMAIN to DTAC to allow the DTAC to change its SC TACSAT on the V Corps command TACSAT net.

Recommendation. Limit the lowest level to which current and future COMSEC key gets positioned, especially in the front-line combat formations, in order to minimize the possibility of compromise. Controlling authorities for each COMSEC key must evaluate

the impact on current tactical operations when directing emergency suppression. Based on evaluated threat, certain COMSEC keys could be extended to coincide with operational maneuver and the changeover could occur during a period of consolidation and preparation for future actions. Flexible plans to pass key using courier should be supplemented when necessary with node center to node center transfers.

Issue: Lack of COMSEC compromise plan.

Discussion: G6 needs to document a COMSEC compromise plan for the division. The OIF compromise plan pre-supposed the limited distribution of electronic COMSEC keys. Ninety days of keying material (KEYMAT) was distributed to the division, and the division distributed 30 days worth of key to brigades. The plan was that in the event of a compromise, the lowest possible level would distribute the new key to its users. However, there was no plan for exactly HOW the key would be distributed in the event of a compromise involving all of the key previously distributed by the division. The plan must include details on how to bring new COMSEC forward from the rear to the forward units in case of a compromise. The plan should also include details on proper reporting procedures through the chain of command to division to higher. The plan must then be practiced in a field environment in order that personnel involved understand the steps.

Recommendation: Develop division, brigade, and battalion-level COMSEC SOPs to reflect compromise procedures. It is also recommended that the compromise procedures be used during future training missions in order to incorporate them into brigade and battalion standards. If COMSEC custodians are supposed to have 90 days' COMSEC, they should have 90 days' worth of all KEYMAT. Instruct units to only give COMSEC that subordinate units need, don't give out all keys, as this risks compromising all KEYMAT.

Issue: Location of the division COMSEC management office (DCMO)

Discussion: Normally the division COMSEC management office operates out of the division rear command post (DREAR) and there should be a set process by which division COMSEC custodians draw COMSEC, return to their division CP, and distribute KEYMAT to the subordinate units. There was no such process during combat operations. This was not the preferred method, nor was it the correct method, but it was successful. New COMSEC KEYMAT being flown in from CONUS was delivered to Camp Doha, where there was no division COMSEC representative. The G6 had discussed this with the theater COMSEC management office (TCMO) and CFLCC COMSEC managers, and CFLCC had indicated that COMSEC would be brought forward to the division as needed. However, the TCMO did not in fact courier any COMSEC forward. Division relied on V Corps to provide the required KEYMAT for the monthly changeover.

Recommendation: Under similar circumstances, the DCMO must determine where their COMSEC inject point is and maintain an individual there to both retrieve the KEYMAT and possibly coordinate transportation of the KEYMAT to the DREAR. All DCMO personnel involved in distribution of COMSEC must have access to a vehicle in order to facilitate pickup.

Issue: Distribution of COMSEC via MSE

Discussion: When confronted with the issue that 3ID (M) was unable to distribute COMSEC due to long distances between the DMAIN and the DTAC and subordinate

units; G6 utilized the bulk transfer method that the signal battalion uses to distribute MSE KEYMAT from one node center to another. The DTAC COMSEC custodian traveled to the nearest node center to pick up the COMSEC and then distributed to the subordinate COMSEC hand receipt holders.

Recommendation: Bulk transfer is an effective alternative to electronic DTD-to-DTD distribution. It will only work if the link between the two node centers is clean, otherwise, there is risk for the receiving unit to get corrupted KEYMAT. It also does not guarantee secure distribution to a single recipient, like electronic distribution from DTD to DTD.

Chapter 17

Communications

Topic D - Electronic Enablers

INMARSAT voice and data systems

Issue: 3ID (M) received the M4 systems too late to be able to provide adequate training and installation. 3ID (M) command group was not trained in the use of the INMARSAT Mini-M by the ADC (M) and commanding general.

Discussion: 3ID (M) received the systems too late to be able to provide adequate training and installation. By the time G6 received the systems, the war had already begun and other systems were in place to communicate. In addition, 3ID (M) had issues coordinating with the contractor to complete installation. INMARSAT phones were initially left back at Fort Stewart and were not brought forward until March. Operators did not show proficiency. G6 was able to operate and show general officer (GO) aides how to use it, however the phones were used infrequently, if at all. The power supplies were only able to be powered using 220 volt outlets, a vehicle cigarette lighter socket, or a solar cell battery charger. One system's antenna mount was broken. Two Mini-Ms were brought over but not used until February, when they were given to the DREAR.

Recommendation: Continue to work with the INMARSAT upon redeployment in order to continue training on the systems. The 64k INMARSAT pipe is great for short halt SIPRNET or connectivity in the initial stages of a division command post setup, however, now that 3ID (M) is set and combat operations have concluded, its usefulness is now in its redundancy. Pursue alternate satellite phone communications. Cancel INMARSAT subscription. First generation INMARSAT phone can be replaced by more reliable, second-generation equipment that is manufactured within CONUS. This will facilitate easier replacement of parts than currently available.

Cell Phones

Issue: During the receiving, staging, onward movement ,and integration (RSOI) phase of operations, division relied heavily on non-secure commercial cell phones.

Discussion: During RSOI phase of operations, division relied heavily on non-secure commercial cell phones. Cell phones were an effective and relatively efficient form of communications between sites that were often great distances apart. However, because

they are non-secure, their utility is limited. The division initially had Smart-zone radios, but CFLCC reallocated them to other users. The Motorola XTS-3000 radios we have at Fort Stewart are compatible with the Smart-zone trunking system, but only our MPs have secure-chips for their radios.

Recommendation: The division should purchase more Motorola XTS-3000 type radios and ensure that we get the secure chips for them. The division should also provide specifications explaining to units what they should buy, if they choose to buy additional radios.

Iridium Phones

Issue: There was only limited phone support for the division. Iridium phone reliability and ease of use were constraints.

Discussion: The division initially distributed 13 Iridium phones to the BCTs and separates. As more slice elements came forward with additional requirements, the division requested and received an addition 30 phones, for a total of 43. This number was augmented by other task-organized units that brought their own Iridium phones. The division initially planned for 6-8 contingency phones, however these were quickly used to support users whose phones were broken or other unforeseen requirements.

Like SC TACSAT, Iridium phones were excellent in providing clear voice communications regardless of distance. However, Iridium phone calls were not successful approximately 50% of the time. Many times calls would terminate mid-call. Other times, calls would not successfully connect. This is possibly a function of the short battery life of the phone system, as well as the tendency for users to leave the phone off and charge the battery. Batteries could only be charged using a cigarette lighter or a 110-volt outlet. Users did not know their PIN codes for both powering on the phone and also making a secure call. As a result, on about 30 occasions, Iridium phones were locked out. G6 kept the unlock code close hold, as well as the secure mode PIN numbers for all phones. The power-on PIN number was the same for every phone and was widely known.

Recommendation: Recommend 3ID (M) purchase additional phones to reach a total of 60 fully mission capable (FMC) Iridium phones with secure sleeves. G6 should be responsible for maintaining 5-10 floats that will be used to replace damaged or destroyed equipment. The division must adhere to a more strict priority of distribution. For each phone, provide an AC/DC inverter to allow operators to charge the phone from any military vehicle.

Issue: Units did not always use phones in secure mode, resulting in violations of OPSEC.

Discussion: Higher headquarters reported that Iridium phones were used in the non-secure mode to pass classified information. There were several reported incidents of troop movements and locations being passed. The issue seems to have been threefold. 1) Soldiers did not understand the necessity of using the secure mode and thus did not use it, 2) Soldiers did not know how to use the secure mode and 3) Leadership did not place an emphasis on using the secure mode.

Recommendation: Users must be instructed on use before operating an Iridium phone. Before an individual signs for a secure phone, he must be taught step by step how to use the phone in the secure mode. The leadership must also place an emphasis on security for the phones. The Iridium phones should be treated as a controlled cryptographic item (CCI) item just as a filled automated net control device (ANCD) is. Users signed for the phone must keep it secured from unauthorized usage.

Commercial Satellite TV

Issue: Commercial TV access within the division.

Discussion: Prior to deployment the division had validated the requirement for commercial satellite TV requirement at division CPs only, expecting the fielding of the Global Broadcasting System (GBS) as a means to provide service in theater. The division did not receive GBS until just prior to crossing the LD and was able to coordinate with CFLCC Directorate of Information Management (DOIM) to receive KUSAT satellite decoders as an alternative. After crossing the LD, the division was able to coordinate to receive an AFRTS satellite decoder from V Corps, but this was received too late to be of significant utility. The requirement for satellite TV support at echelons below division were not stated until after conclusion of combat operations

Recommendation: Upon return to home station, research solution for providing BCT CPs with satellite decoders in the field.

Issue: Providing access to TV at multiple locations within a single division CP

Discussion: The division automation office forecasted the requirement to provide satellite TV reception to multiple locations in the division main CP by attaching black box balun connectors to each TV. This allowed the audio and video signals to be consolidated into a single CAT V cable and piped to another location. By doing this, a single signal was chained from one TV set to the next.

Recommendations. Units anticipating a requirement for satellite TV access should procure a black box balun connector and enough CAT V cable to support their requirement. This is not a G6 responsibility.

Chapter 17 Communications Topic E - Tactical Radio Systems

AN/PSC-5 Spitfire TACSAT Radio

Issue: There were a limited number of radios available for distribution, resulting in reduced number of nets and a lack of spares.

Discussion: The division conducted combat operations with 49 SC TACSAT radios. Not all of these radios were fielded to the division. Three were provided by CFLCC in support of the CONUS contingency response force (CCRF), and V Corps provided one.

As a result, the division could only distribute among three nets: C², fires, and O&I. This provided each BCT and separate battalion the ability to satisfy most division C² requirements. Some separate battalions did not receive radio systems for the O&I net. Some radio systems were not FMC, and as a result some units began with degraded capability. During the course of pre-combat operations, many units had radio systems become non mission capable (NMC). The radios cannot be fixed locally, they have to be returned to the factory for repair, so the radios were turned in to support battalion electronics shops, and they were not available for the war. Brigades ended up using radios slated for the O&I net in order to communicate on the C² net. G6 attempted to procure 18 addition TACSAT radios for the division through submission of an operational need statement to FORSCOM prior to deployment and contributed to the V Corps urgent need statement to DA prior to initiation of combat operations. These efforts were unsuccessful.

Recommendation: Acquire more TACSAT radios. Future combat operations will probably employ 3ID (M) in a similar role as in recent combat operations, requiring the division to move great distances at a rapid rate of speed. The usefulness of the SC TACSAT radio has been underscored in this conflict. The division should look at purchasing more SC TACSAT radio systems to provide BCTs and separate battalions with additional replacement radios. Additionally, the division should investigate providing additional radios to units in the division with unique long-range communications requirements. These units may include, but are not limited to, division cavalry, MPs, and support battalion medical companies.

AN/PSC-11 Single Channel Anti-Jam Manportable (SCAMP) terminal radio system

Issue: The division ultimately was unable to employ its SCAMP radio systems due to various reasons.

Discussion: The DISCOM received 10 SCAMP radios that were redistributed from other units in the division. DA initially fielded the systems to provide divisional CPs with long-range communications ability, but the division decided to provide the CSS community with long-range communications. Several individuals from division support command (DISCOM) and G6 attended school training on the radio system, but the division began its deployment before the soldiers returned, so there was a shortage of people who knew how to use the systems. During the transit process, five of the ten systems were lost when the DISCOM sensitive items MILVAN was not recovered. Five systems did arrive in theater and were successfully programmed. However, the privileged terminal that controlled the network became NMC. Because of these reasons, the division never completely integrated SCAMP into the division's communications architecture.

Recommendation: The division must look at alternate means of employing the limited number of SCAMP radios that are available due to the loss of five systems. SCAMP radio is not an on-the-move system. It requires dedicated network planning and significant setup time to be successful. Any asset that it supports must be stationary.

SINGARS FM Radio Family

Issue: Field expedient long range antenna

Discussion: In an attempt to gain greater FM range the DIVARTY combined two different types of antenna systems. The 9-meter (SHF) mast from one of the supporting SEN teams that was not in use was combined with two sections of an OE-254 to create the tallest antenna at the DIVARTY TOC. Not only did this antenna increase the range of digital nets, but when integrated into the setup process of a DIVARTY expando van, this telescoping antenna went up quickly at each jump.

Recommendation: The lack of quick erect antenna mast system (QEAMS) antennas facilitated the establishment of an effective TTP that can be used by any BCT to extend the range of a radio system in a permissive environment.

Chapter 18 Logistics

Chapter Contents

Introduction/Lessons Learned

Topic A - Unit Basic Load/Ammunition Basic Load (UBL/ABL)

Topic B - Prescribed Load List/Authorized Stockage List (PLL/ASL)

Topic C - Modified Table of Organization and Equipment (MTOE)

Topic D - Force Modernization

Topic E - Personal Baggage and Flight Manifest

Topic F - Unit Movement and Procedures

Topic G – Combat Service Support (CSS) Flexibility and Learning on the Move

Introduction

During Operation IRAQI FREEDOM (OIF), the Third Infantry Division (Mechanized) (3ID [M]) moved farther and faster than any other ground offensive operation in history. Victory was accomplished through brute force logistics with a combination of tailored, mobile support packages and robust logistics release points (LRPs). However, with numerous logistical challenges throughout the operation, specifically during the operational pause at OBJ RAMs, many units operated dangerously low on ammunition, fuel, water, and other sustainment items. This chapter highlights some of the service support successes and issues associated with extended offensive operations.

Lessons Learned

- Logistics estimates must be conducted up to and including corps level. Estimates should be reviewed early in the planning process to ensure proper quantities of materials such as Class IV and V are made available in theater for using units.
- Revisit the tasking of division engineer assets to build Class IV combat configured load (CCLs). This is a theater responsibility
- A major shortage of Class IV in theater made the resupply of Class IV efforts very difficult. Class IV should include the following materials: geotextile, mobi-matting, and Hesco bastions
- Armor battalions found the high explosive antitank (HEAT)/multipurpose antitank (MPAT) rounds more versatile than SABOT. The HEAT/MPAT rounds also performed better on buildings, trucks, and bunkers while still maintaining lethality

- Ammunition holding areas (AHA) were established with minimal doctrinal guidance. The division or theater should provide required number of MOS 55Bs to adequately maintain the flow of personnel and ammunition entering and leaving the AHA
 - The lack of transportation assets frustrated the logistics arena. The poor response to logistical support, especially Class IX was largely due to the lack of ground and air support
 - Combat service support elements were limited to minimal security during logistic package operations (LOGPACs) due to the lack of communications equipment and mounted machine guns. These are items that are short on most unit MTOEs
 - The Force XXI battle command brigade and below (FBCB²) system was proven to be a major asset to the BCT, but would be an even greater asset to the forward support battalions (FSBs) who are not co-located
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Chapter 18 Logistics

Topic A - Unit Basic Load/Ammunition Basic Load (UBL/ABL)

Issue: Two-fold issue:

1. Though Class IV management and distribution is a logistical function, engineer experts are often called upon when it comes to construction and barrier material.
2. The theater had no plan and contributed nothing to preparing Class IV resources in anticipation of such a rapid offensive operation, predicted to be highly engineer intensive.

Discussion:

1. Logistics Function: Construction and barrier material components are a class of supply. Receipt, storage, and issue of these items are clearly logistics functions. These materials are used for blocking positions or checkpoints established with wire and other materials. Because the bulk of these materials are commonly consumed in support of mobility/countermobility/survivability engineer tasks, obtaining and managing the supplies is mistakenly delegated to engineer personnel. Due to lack of theater (logistic) support assets, 3ID (M), with less than a month from the beginning of the division's offensive operations, requisitioned and built 120 each 463L pallets of Class IV combat configured loads (CCLs). By this time, the division should have been well into unit level detailed planning and preparation, not focusing large efforts on projects such as this one.
2. Organic divisional units cannot rely on unit basic load (UBL) alone to sustain engineer barrier and force protection requirements. Early in the planning phase, the assistant division engineer identified quantities and types of Class IV materials required throughout the operation and submitted these requirements to Coalition Forces Land Component Command(CFLCC) through both engineer and logistics channels. Although the division exercised every available avenue to inquire on these resources, there were insufficient quantities of Class IV in theater when the division closed. The division's

effort to purchase both common national stock number (NSN) Class IV materials and unique engineer construction Class IV (i.e., geotextile, mobi-matting, and Hesco bastions) met with no support from high headquarters. The supply process could only make available enough supplies for UBL. Once the division crossed the line of departure, units quickly consumed Class IV UBLs in both planned and unplanned missions. Theater distribution assets were inadequate and the distribution management system could not fill the division's requirements. Lumber and other common American construction materials were not available in a country that predominantly uses steel and clay based bricks.

Recommendation: Every echelon must thoroughly analyze Class IV requirements, and coordinate complete estimates within the engineer and logistical channels. Maneuver planners and logisticians must continue to work together to ensure that identified resources are available and provided to units and appropriate stocks and transportation assets are dedicated to re-supply operations.

Issue: UBL validation.

Discussion: Armor units' ammo basic loads (ABLs) consisted of HEAT/MPAT heavy 120mm basic load instead of the normally recommended SABOT heavy mix. HEAT/MPAT munitions are better against trucks, buildings, and bunkers, and are still very lethal against heavy armor. The BCTs used SABOT far less often, and it is not as versatile.

Recommendation: Adopt the HEAT/MPAT heavy tank ABL to increase the versatility and lethality of armor units.

Issue: Engineer Class V requirements: ABL demolition materials were not sufficient to properly destroy caches of enemy weapons and munitions.

Discussion: Class V demolition resources were not sufficient to effectively destroy the large amounts of enemy weapons and munitions captured during OIF. If not secured or destroyed, these munitions represent an immediate or future threat should remaining conventional, unconventional, or terrorist threat elements gain possession of them. The rapid pace of the operation did not strain the capability of both maneuver nor engineer forces to secure the munitions and continue forward progress in executing their combat mission. Frequently attempts to destroy munitions with insufficient explosives resulted in the munitions "cooking off," hours later, creating additional hazards.

Recommendation: Theater should develop CCLs heavy on basic demolition materials (C4) and initiation systems specifically designed for the destruction of enemy weapons and munitions, prepare the CCLs for multiple transportation modes, and pre-plan the lift requirement into the overall distribution management system.

Issue: UBL validation

Discussion: DIVARTY designed and drew a UBL based on war gaming and analysis from a variety of sources. During OIF, maneuver commanders opted for higher concentrations of HE over concerns about dual-purpose improved conventional munitions (DPICM). Additionally, the new M795 HE round affords units an added 4 km range. Copperhead was very rarely used.

Recommendation: Increase HE (M795) and HER in the DIVARTY UBL and decrease DPICM and BBDPICM. Revisit search and destroy armor munitions' (SADARM) role as a precision killer munitions for the artillery. And finally, decrease Copperhead allocations.

Issue: DIVARTY had inadequate flexibility of Multiple Launched Rocket System (MLRS) munitions.

Discussion: During Operation IRAQI FREEDOM, the DIVARTY MLRS battalion drew its ABL consisting of 270 M26 pods and 54 M39 Army Tactical Mission System (ATACMS) missiles. Despite initial reports to the contrary, M26A1 pods were not available in theater. The M26 rocket proved effective and accurate, but the enemy systems consistently outranged our artillery. The M26A1 might have mitigated this range disparity. Reservation of release authority at the corps level precluded 3ID (M) use of ATACMS during battle. The only ATAMCS rounds fired were in support of a V Corps deep attack before the ground war started.

Recommendation: Ensure M26A1 rockets are available for future combat operations. Develop an MLRS suite of munitions that allows for greater employment on the battlefield.

Issue: Inadequate resupply of artillery Class V

Discussion: The division conducted extensive ammunition planning using the military decision-making process (MDMP) to identify Class V required supply rate (RSR). The required supply rate was never approved, nor was the control supply rate (CSR) ever published at any level. Ammunition re-supply, meticulously planned and synchronized at the division level, was completely uncoordinated at any level above. When ammunition did arrive in the ammunition supply point (ASP), it was usually in bulk, with incompatible quantities and types of rounds and fuses.

Recommendation: Theater must supply adequate transportation assets to support pushing CSRs forward. Division must insure that ammunition resupply is coordinated based on requisitions from using units, not expenditures reports.

Issue: Ammunition turn-in

Discussion: Logistics units and agencies did not adequately plan ammunition turn in after the combat operations ceased or significantly subsided. The theater originally had agreed to pick up all dunnage once our units uploaded their combat ammo. As the environment developed to conditions that supported ammunition turn-in, it became clear that our units did not have appropriate dunnage available to allow for local turn-in, nor could the already strained trans assets move the dunnage from Kuwait.

Recommendation: Ensure that an adequate plan is developed to facilitate a speedy turn in of ammunition at the closest ASP within a division's sector.

Issue: Ammunition accounting and management problems

Discussion: Unit AHAs in the camps operated under minimal doctrinal guidelines. FSBs did not effectively outfit the AHA with enough personnel to guard and escort customer units into the AHA. Units stored ammunition in the AHA without conducting a joint

inventory with AHA personnel. Personnel traversed throughout the AHA unescorted. Neither the guard force, nor the AHA personnel received a brief on the operating procedures at the AHA. Customer units drove vehicles in and around the AHA (to include a heavy expanded mobility tactical truck (HEMMT) fueler). Many problems existed in the AHA, which may have created an environment, where ammunition could be lost or misappropriated.

Recommendation: To effectively operate an AHA, the unit should position all 55B personnel (when assigned) to operate the AHA. The AHA requires a sufficient amount of personnel for security and to escort any customer units into the AHA. Units must provide the AHA with a valid access roster identifying personnel authorized access to that particular unit's ammunition. Units storing ammunition in the AHA must conduct a joint inventory with an AHA representative prior to (or as soon as possible) storing ammunition. All unit ammunition must be clearly segregated and identified. Only vehicles carrying ammunition (or preparing to load ammunition) will enter the AHA.

Issue: 24th Ordnance ammunition supply point (ASP) support

Discussion: The 24th Ordnance Company supported the 3ID (M) by assisting the division ammunition officer (DAO) in palletizing and pushing the initial ABL to the units. Furthermore, the 24th Ordnance established ASPs to facilitate Class V resupply as far forward as possible. The 24th Ordnance also received all Class V ammunition in preparation for turn-in to theater.

Recommendation: Recommend the supporting ordnance company arrive in the theater during the advanced cadre (ADVON) deployment. This will allow the ordnance company time to receive the supported division's Class V ammunition from theater and begin preparations for ABL issue.

Chapter 18 Logistics

Topic B - Prescribed Load List/Authorized Stockage List (PLL/ASL)

Issue: Maintenance of Bradley fire support team (BFIST) specific components

Discussion: Infantry and armor task forces do not have the required maintenance support to adequately fix problems inherent in the BFIST. Turret mechanics lack training in the functions and repair of items such as the inertial navigation system (INS), Tactical Communications Support Processor (TSCP), FIST distribution box, and other components.

Recommendation: When task organized for combat, push BFIST specific PLL to the task forces. This will greatly reduce maintenance hours spent to get the vehicles operational. Cross train the BFIST master gunner and infantry Bradley mechanics to troubleshoot and repair the BFIST specific components to ensure the most rapid repair of equipment necessary during all combat operations.

Issue: Non-availability of Class IX

Discussion: Units throughout the division received few if any Class IX repair parts during Operation IRAQI FREEDOM. Class IX, when received, consisted of a relatively few major assemblies, starters, and generators. Planning factors for distances involved should have been used to adjust requirement for specific PLL lines. Theater distribution of Class IX was limited to Kuwait. For most of the operation, corps pushes of all classes of supply were unpredictable with little or no inventories of what was being pushed until received. Units were required to submit 2765s throughout the operation, but did not receive ordered parts until well into the battle. Additionally, the ability to send parts orders was made difficult due to lack of knowledge and practice in blasting. Due to inability to blast, ordering was conducted by driving back to the FSB/MSB. The only parts received by the unit during the operation were those already in the system at assembly area Hammer and Camp Virginia.

Recommendation: Class IX requisition needs to be established using tactical website (TACWEB) to allow units to request high priority items when blasting fails. All logistical cells should have communication systems allowing units to send and receive data. Also, there is a need for more training and planning on automation systems for theater support units. These were some of the same lessons we learned in Operation DESERT SPRING/DESERT STORM specifically, **TB-43-0201-1, *Delayed Desert Damage*** and TB-43-0221-2, which listed components most likely to fail on equipment used in theater. Accurate reviews of all previous after-action reviews (AARs) would identify some problems early.

Issue: Availability of critical communications parts and batteries.

Discussion: The fifteen-day UBL of batteries sustained some units for approximately 20 days before certain batteries ran critically low. Battery resupplies were isolated events and barely sustained units through the transition to stability and support operations (SASO). It would not have been possible to sustain combat operations beyond transition date without significant resupply. Similar problems with basic communications equipment (antennas, hand microphones, and cables) existed as well. Units did not receive requested parts before movement to attack positions, and could not draw from the supporting FSB's authorized stockage list (ASL). Similar to vehicle repair parts, combat losses and scrounging kept units functional for the short term.

Recommendation: Ensure basic communications equipment is carried on ASL at all echelons of CSS. Carry at least a 21 day UBL of batteries and as much equipment as possible at the lowest level.

Chapter 18 Logistics

Topic C - Modified Table of Organization and Equipment (MTOE)

Issue: Security with CSS Elements.

Discussion: Security problems with CSS elements stems from three major problems; lack of mounts for machine guns, lack of comms in CSS vehicles, and lack of emphasis during training. Units experienced a lack of confidence and ability in CSS elements to properly secure themselves during convoys. This was especially true for combat trains

convoys conducting LOGPAC operations. Therefore, units dedicated many assets to ensure our CSS assets were secured and that we could talk to them while moving.

Recommendation: Division must integrate CSS assets into all force on force training events. It must force them to protect themselves, wear multiple integrated laser engagement simulation (MILES), and be responsible for reacting to enemy fire at all times. The division must also get more radios on the MTOE for the support platoon. Current MTOE allocations are inadequate and provide no authorization for cargo trucks or fuelers. Additional radios should be provided for the support platoons for subsequent MTOEs.

Issue: Lack of logistics support for MLRS

Discussion: The MLRS unit is unique because it is the only general support (GS) battalion in the division with a brigade HQ. As such, it is supported by the main support battalion (MSB) but spent most of OIF moving through BCT areas. During combat, area support was utilized and the MLRS battalion drew all classes of supply except Class IX from the FSB it was closest to. This system worked up to OBJ Lions because of planning done prior to the war. However, it lacked flexibility. If an unplanned shift in the scheme of maneuver occurred, the MLRS battalion would have been left without an FSB capable of supporting it. Additionally, almost all bulk and special supplies were pushed from division to BCTs. Since the MLRS battalion (and HHB DIVARTY) is not in a BCT, it was often left out of the distribution. MLRS units, like cavalry, are responsible for ranging the entire division zone. Therefore, like the cavalry unit, the MLRS unit should have a dedicated forward logistics element (FLE) during all operations.

Recommendation: Resource a FLE for MLRS support.

Issue: Lack of general transportation assets.

Discussion: The lack of general transportation assets (light/medium and medium truck companies) and the failure of host nation assets to perform as planned, had a negative impact on the quantity and consistency of support to the division. The assets were not sufficient to support corps and divisional requirements. During planning, an assumption was made that host nation assets would offset this shortage of assets. Host nation trucks never performed as efficiently as assumed. The shortfall in general transportation assets created shortages when carrying capacity could not meet divisional requirements. A shortage in a given class of supply required that a disproportionate number of trucks move the shortage class of supply forward inundating our capability in that supply and creating a shortfall in another class of supply. This newly created shortfall later required a disproportionate number of trucks to correct. This phenomenon came to be known as "resupply by inundation"(RBI). This RBI cycle could not be broken until the operations tempo (OPTEMPO) slowed sufficiently to reduce requirements.

Recommendation: Two potential corrective measures for this situation are additional general transportation assets or conducting the operation at a slower OPTEMPO that generates smaller requirements in a given day. Slower OPTEMPO as a corrective measure would have been a significant deviation from the operational plan and would cause logistics to drive the operation, not a doctrinally prescribed solution.

Issue: Inadequate transportation assets for direct support maintenance.

Discussion: Throughout the operation the transportation of major assemblies to the maintenance support team (MSTs) has been an issue. There are not enough transportation assets to move parts around the battlefield.

Recommendation: The MTOE for FSB Bravo Company should be changed so that each MST and shop office has a HEMTT with a material handling equipment (MHE) crane. This would allow for easier movement of Class IX from the brigade support area (BSA) area to the TF unit maintenance collection points (UMCPs), as well as the retrograde of unserviceable Class IX back to the BSA.

Issue: Cargo carrying capacity

Discussion: Units do not have the appropriate cargo carrying capacity to support requirements. Units were directed to carry five days of supply (DOS) of Class I and water, 15 DOS Class III (P), .5 UBL/ABL/ turret load, 30 DOS Class II (toilet paper, acetate, etc.) and chemical defense equipment (CDE).

Recommendation: Amend MTOE/APS to authorize units additional cargo HEMTTs and palletized load systems (PLSs). The 5 ton and 2 ½ ton do not have the mobility necessary in rough terrain and they lack the bulk supply carrying capacity. Obviously, the PLS with trailer is preferred.

Issue: Haul assets for TF rollers

Discussion: The M916 5T tractor with a low bed trailer lack off-road capability. Consistently, the low bed truck would get mired in sand even without a roller on the trailer. It also significantly slowed movement whenever the field trains had to move cross-country due to the continuous recovery requirement. Because of its terrible mobility when uploaded with a roller, some units had to abandon the TF roller within 24 hours of attacking into Iraq.

Recommendation: Replace the low bed trailer (LIN S70517) with a cross-country capable trailer or eliminate rollers from the MTOE because support units lack resources to haul them.

Issue: Attachment of a treatment team (TMT) and two evacuation vehicles to the ECH I facilities.

Discussion: The attachment of the TMT team and the two M113 evacuation vehicles really increased the ability to effectively position the health care providers in the proper tactical place to aid in collection and treatment in combat operations. The TF's wide area of responsibility needed more than what was normally organic to the ECH I facility. This additional TMT team allowed for effective treatment of casualties.

Recommendation: Continue to attach the TMT team and two M113 evacuation vehicles to the ECH I facilities during all combat operations. Consider a MTOE change for the medical platoon at the TF level.

Issue: Command and control of medical evacuation (MEDEVAC) assets.

Discussion: Prior to deployment, the aviation brigade coordinated with the division support command (DISCOM) commander and the division medical operations center

(DMOC) on the best command and control relationship to sustain medical companies (air ambulance) during combat operations. The issues addressed focused on situational awareness, maintenance, sustainment, and aviation plan staffing at the FSB and BCT level. The recommendation approved by the division was the centralized command and control (C²) and sustainment of these aircraft under the 4th Brigade with decentralized execution in support of the BCTs. This relationship was especially critical because the primary means of evacuation to higher echelons of care was by air assets. This relationship worked extremely well and provided responsive evacuation of over 400 U.S. and Iraqi casualties. The brigade was able to provide all necessary maintenance, forward arming and refueling point (FARP) support, Army airspace command and control (A²C²) products, air tasking order (ATO) products, threat updates, routing, and, as necessary, armed escort support to ensure the success of each evacuation. This would not have been possible if these assets were placed under the control of the BCTs. During both occasions that these platforms were placed under the control of the BCT, aircraft launched without requisite knowledge of the threat and airspace control measures. Neither the FSB nor the BCT is capable of managing these operations based on their current staffing and often do not have electronic access to the air space tasking and control orders. The C² and maintenance relationship exercised by the division is the preferred method of C² and sustainment and is supported by the 36th Evacuation Battalion commander and the 30th MEDCOM commander as the most preferred method of employment of direct support (DS) air ambulance assets at the division level. The division should continue to place DS air ambulance assets under the C² of the 4th Brigade to best support this low-density high demand asset within the division.

Recommendation: Continue to place MEDEVAC assets under the C² of 4th Brigade to best employ and sustain air ambulance assets on the battlefield.

Issue: MEDEVAC communication

Discussion: Air MEDEVAC was successful during combat operations South of Baghdad. Air MEDEVAC was called using brigade command nets due to limited retrans capability. MEDEVAC requests were forwarded from the BCT TOC/TAC to 4th Brigade via Iridium or tactical satellite (TACSAT). Enemy situation and weather prevented use of air assets in the urban environment. Ambulance exchange points (AXP) operations were critical with the distances involved from frontline units to nearest Level II (+) care. However, the need to secure AXP assets is crucial.

Recommendation: Need to modify MTOE to authorize retrans capability for nets up to brigade level. Each net needs to be monitored in the BCT TOC and higher. Division needs a dedicated TACSAT net for all Air MEDEVAC/ casualty evacuation (CASEVAC) requirements. Also, modify C MED MTOE to include M1025 security vehicles so that other combat power does not have to be dedicated to protecting the AXP assets.

Issue: Use of aerial resupply

Discussion: Continually, it was briefed to BCTs that two CH-47s were available to conduct daily aerial resupply to BCTs. Unfortunately, little to no daily aerial resupply was conducted following the early stages of combat.

Recommendation: Dedicate one CH-47 to each BCT and, based on the enemy situation, fly daily LOGPACs to the BSA or to unit trains. LOGPACs should be packaged to maximize lift and should include critical Class I and water, Class III (P), Class V, and Class IX. BCTs provide liaison officers (LNOs) and details in the division

rear command post (DREAR) to build logistical resupply packages and put this inside the CH-47 to be pushed out to the BCT each day. In order for this system to work, CH-47s MUST fly daily and MUST fly as far forward as possible, at least to the FSB. Contingency plans for airdrop resupply should be considered for high priority resupply items.

Issue: Potable bulk water for headquarters and headquarters company.

Discussion: An HHC in an armor unit is authorized three M149A1 water trailer tanks per the FY03 MTOE. At line of departure (LD), one HHC had four water trailers, but only the authorized three could haul potable water. As the TF transitioned to consuming bulk water, consumption forward in the TF battlespace for HHC elements exceeded 400 gallons per day (the capacity of one trailer). Three trailers did not allow a sustainable bulk water cycle for the TF. Two water trailers were required forward in a 24-hour period, and distances between the field trains and the TF allowed only one LOGPAC per day. To provide sufficient bulk water without shortages, two trailers needed to be forward (being consumed) while two trailers were in the field trains being re-supplied. This MTOE deficiency forced HHC elements to draw bulk water from company teams, affecting their re-supply operations in terms of time and quantity of water available.

Recommendation: Add a fourth M149A1 water trailer tank to the MTOE for a tank battalion HHC (LIN W98825).

Issue: Five-gallon water can re-supply during combat operations.

Discussion: In addition to damaging rations small arms, rocket propelled grenades (RPG), and indirect fires also destroyed five-gallon water cans. Some combat vehicles attacked into Baghdad with no five-gallon water cans and were sustaining themselves by refilling 1.5-liter water bottles with bulk water. Replacement of such a large quantity of water cans, like other essential items has been challenging. Few have actually been replaced at the time of operation transition.

Recommendation: Add or carry at least 100 five-gallon water cans in the ASL at all echelons of support.

Issue: Class I bottled and five-gallon water storage

Discussion: Bottled water is clearly the answer to the resupply of drinking water. It speeds up LOGPAC times significantly and is more easily stowed in the interior of the vehicles. The greatest advantage of bottled water was that it was easily replaced, unlike five-gallon water cans. Units had difficulty maintaining 5-gallon water cans because of shrapnel and small arms fire. Some combat vehicles attacked into Baghdad with no five-gallon water cans and were sustaining themselves by refilling 1.5-liter water bottles with bulk water. Every enemy contact would cause units to lose several water cans to shrapnel or small arms fire. In an urban environment, water cans can also be destroyed from getting hit against walls, light poles, and other obstacles. With bottled water in the system, shortages are easily replaced. One additional item that would increase units ability to protect water, bottled or five-gallon cans, would be extended bustle racks with 7.62 ballistic protection. This would increase ability to carry/stow Class I and prevent its destruction by small arms fire/shrapnel.

Recommendation: Refit combat vehicles with an extended bustle rack with 7.62 ballistic protection. Plan for the use of bottle water for Class I re-supply in all future combat

operations. Also, add or carry at least 100 five-gallon water cans on the ASL at all echelons of support.

Chapter 18

Logistics

Topic D - Force Modernization

Issue: TACSAT and MTS availability.

Discussion: Standard Army Retail Supply System (SARSS) and Standard Army Maintenance System (SAMS) transactions cannot occur with any reliability over the extended distances that many division units covered.

Recommendation: In extended offensive operations it is absolutely imperative that communication systems be available to call back O2 priority requisitions to the direct support unit and to the division Material Management Center (DMMC). Such communications capabilities would allow for units to get a constant status on requisitions and, if haul capacity exists, a consistent flow of Class IX.

Issue: Situational awareness in the logistics community

Discussion: Logistical nodes on the battlefield lacked situational awareness of the maneuver units on the battlefield. The brigade S4 is the only logistics entity in the BCT that has an FFCB² system, but is not always collocated with the FSB. Without situational awareness, it is extremely difficult for the logisticians to monitor movement of forces and maintain communication with maneuver forces.

Recommendation: All logistical nodes should be outfitted with FFCB² and means of voice communication. This would establish the link and situational awareness needed to project requirements, track the movement of forces, and ensure that critical logistics and tactical information is available to all. This will provide logisticians with the same battlefield awareness and capabilities currently afforded to maneuver units.

Issue: In transit visibility (ITV) of logistics support items.

Discussion: The division has not had ITV of forward moving supplies. The lack of this visibility has had a negative impact on the DREAR and DISCOMs ability to support its division customer base. It appears that corps MCTs are not properly integrated with corps and theater supply support activities (SSAs). This has handicapped their ability to capture and forward ITV information regarding the movement of supplies to the division. The lack of consistently dependable communications systems has also played a role in this lack of ITV.

Recommendation: Better integration of the MCTs and a more dependable communication system would have offset this problem.

Issue: Use of the Movement Tracking System (MTS).

Discussion: The Movement Tracking System has been very helpful to the division transportation office (DTO)/movement control office (MCO). MTS has been the most consistent communication system. The system has been used to communicate with

units and provide unit movement and positioning information. This provided situational awareness and enabled the DTO and MCO to transmit requirements quickly and consistently even while moving.

Recommendation: Increase the level of training for units/personnel given the MTS equipment. Increase the number of MTS systems resident in the division.

Issue: Non-use of Orange 1 report (request for Classes I, II, III)

Discussion: Division established a TACWEB format for processing Orange 1 reports for supply requisitions. This system was not used and division was forced to utilize FM communications and e-mails to request supplies. During operations it became apparent that Orange 1 reports were only used to forecast unit headcounts and not to process requests. Units never received a supply push based on Orange 1 requisitions.

Recommendation: Reestablish the Orange 1 as the primary supply request form. Establish a TACWEB based Orange 1 report that can be accessed by all logistical support units to process supply requests. A common Orange 1 format throughout division would facilitate the ordering process as DIVARTY units move from one support element to another under area support.

Issue: Need to update DIV/DISCOM field standing operating procedures (FSOP)

Discussion: FSOP is out of date (1999) and does not fit the environment. The FSOP should have been revised prior to deployment. Orange reports and LOG battle rhythm was not adequate and confusing for new personnel.

Recommendation: Update immediately upon return to Fort Stewart. Use at the next CPX, validate, and then finalize. Tie explanations to TACWEB reports.

Chapter 18

Logistics

Topic E - Personal Baggage and Flight Manifest

Issue: The practice of building flight manifest by the number of seats available for personnel deploying from Hunter Army Airfield to Kuwait resulted in soldiers being separated from personal baggage.

Discussion: During the initial stages of the division's main body deployment, personnel departing Hunter Army Airfield (AAF) were flown on contract flights to Kuwait International Airport. Aircraft were filled to maximum seating capacity in order to expedite the deployment timeline. However, problems arose with the shipping of baggage. Most soldiers deployed with a minimum of two bags and in many cases shipped footlockers with unit equipment as well as communications equipment for vehicles to be drawn from Army prepositioned stock (APS). Normal weight allowances for airline passengers were exceeded by deploying personnel. Additionally, cargo space within the transport aircraft was insufficient to handle the increased baggage. An initial attempt to resolve this problem was to fill every seat on the aircraft and transport as much cargo as possible. Excess baggage was palletized and shipped on a subsequent cargo flight. There was no selection process to identify which bags would be shipped with deploying personnel and which bags were to be held for a follow on

shipment. Therefore, when soldiers arrived in Kuwait, they may have all, part, or none of their baggage. Soldiers were not held at the airfield in Kuwait to await follow-on baggage shipments. They were pushed out to various units throughout the area of operations (AO). As follow-on baggage arrived, it was sorted and push forward to those soldiers. This process proved very ineffective and caused many soldiers to spend days and sometimes weeks in forward deployed positions without their field equipment. This also created a huge work requirement for movement personnel to sort and push baggage. As a final solution to this problem, the division stopped deploying soldiers unless their baggage was accompanying them on the flight. During boarding procedures at Hunter AAF, if the cargo capacity of an aircraft was exceeded, passengers were removed from the manifest and scheduled to fly on a later flight.

Recommendation: Flight manifest must consider the cargo capacity as well as the seating capacity of aircraft to determine the maximum number of personnel that can be deployed in a single flight. Soldiers should not be separated from baggage when deploying to field conditions. Continue the technique of building flight manifest for transport flights based on cargo capacity as well as seats available to ensure soldiers are not separated from personal baggage when deploying to field conditions.

Chapter 18

Logistics

Topic F - Unit Movement and Procedures

Issue: Movement capability from LD to current operating locations.

Discussion: Unit movement from Kuwait to current locations has been extremely variable. Difficulty of movement on routes and inaccessibility to routes caused unit movements to last as much as 100% longer than planned. Assumptions regarding the ease of movement and lack of contact proved to be optimistic. Despite detailed planning, the failure of these assumptions caused movement forward not to occur as planned. Lack of detailed knowledge of the poor condition of the route in localized areas was one factor that increased the difficulty of executing unit moves. Enemy contact also slowed movement forward and created the need to move units on other than planned routes. Most units could not attain/sustain the 30 kmph planned movement speeds in this environment. The slower movement rate caused routes to back up with traffic and become congested. Failure to keep later moving units off congested routes added to the congestion experienced by units already on the routes. Another factor contributing to the inefficient movement forward was a failure by units to comply with accepted convoy procedures. Units moved on routes without march credits, stopped on roads for rest halts, and moved on the routes without regard for other units on the route. This lack of convoy discipline caused traffic jams and created situations where units move three abreast on two lane routes. Vehicle damage and delays in movement were the result of all of this uncoordinated activity.

Recommendation: Movement/highway regulations and procedures must be strictly enforced and monitored by division. Moreover, units must maintain strict convoy discipline in order to facilitate ease of traffic flow in and out of the area of operations.

Issue: No executable plan in place to transition quickly from high intensity offensive operations to SASO environment.

Discussion: Although V Corps had spoken and many higher-level briefings made mention of Baghdad, operational and tactical planners had not conducted detailed planning concerning the transition to SASO environment. Moreover, logistical support operations had already been difficult. The transition was difficult to anticipate for two reasons: 1) Division log managers were completely engulfed in current logistics operations and simply trying to solve numerous problems that might overwhelm lesser persons. Foresight was clouded by the continuing difficulty to sustain offensive operations, and extreme anxiety that failure might arrive at any moment. 2) There had been no definition of end state for the previous phase and its relationship to the next phase. Indicators had not been identified, and the division was unable to state objectively those conditions that must define end state of one phase and the beginning of another. In the same respect, the division (like the HQ above) had not gleaned an understanding of Phase IV operations. As a result, the division found themselves thrust into Phase IV operations, without a well-understood, easily executable transition. A great deal of time was lost in logistics operations that might have been precluded with a well-defined plan.

Recommendation: Overall the division operations section and all other staff proponents must make a concerted effort to understand the defined phases of the overall operation and the transitions between each phase. Typically, line units have had the most difficulty and found they are the most vulnerable during transitions of all kinds. Moreover, the focus of effort during transition and into the SASO environment is heavily weighted in G5 staff actions and coordination by civil affairs units with the local populous or governmental officials. These experts must take on the responsibility for assisting the division staff in recognition of key indicators. This must be completed prior to execution of previous phases in order to facilitate rapid transition when conditions are met. A technique by which to do this could be the graphic or narrative depictions similar to the division's other decision points.

Issue: No recovery plan in place to police up routes after long division maneuver.

Discussion: During the course of extended offensive operations, many vehicles were lost due to battle damage, maintenance issues, or mired in off road conditions. Designated maintenance collection points (MCPs) along prescribed routes proved insufficient for such lengthy operations. Emphasis was on forward movement, not on stopping points for periods of time in which to conduct maintenance. The division's grueling pace quickly overwhelmed recovery and movement support assets. The division had dedicated minimal heavy equipment transport (HET) support to each major subordinate command (MSC) for this purpose because there were other immediate demands on the assets. The commander's intent was to remain flexible enough to conduct rapid exploitation should we face sudden regime collapse.

Recommendation: Regardless of size, length, and pace of an offensive maneuver of this nature, the division must put together a concerted plan to police up the battlefield and routes.

Chapter 18
Logistics
Topic G – Combat Service and Support (CSS) Flexibility and Learning
on the Move

Issue: CSS flexibility and learning on the move

Discussion: We achieved successful results in a difficult situation, with limited resources, and in an immature theater structure (ARCENT, 377 Theater Support Command). The G4 and DISCOM staff, as well as DS support team and BDE S4s proved themselves to be very adaptive and learned on the move, during a fast OPTEMPO situation. Doctrinal concepts and home station garrison policies did not work in the Kuwait pre-war environment. CSS leadership and their sections were able to quickly adapt and learn how to successfully operate. Many of the fixes were to work longer, harder, and to assume more responsibility. For examples: 1) Provide combined CSS task forces direct support and organize transportation assets to support resupply; 2) Work in or augment the Doha supply support activities (SSAs), Directorate of Logistics (DOL); (3 Provide extra MHE at theater distribution center (TDC) to assist theater units in processing and moving parts; and (4 Put commodity expeditors and key battle staff at Camp NY, Doha, aerial ports of debarkation (APODs), sea ports of debarkation (SPODs) to work issues. The G4 and DISCOM staff identified and consistently worked through difficult logistical obstacles such as: 1) Missing APS equipment, Department of Defense, Activity Address Code (DODAAC) problems; (2 Supply support activity (SSA) supplemental address problems; and 3) Lack of theater transport for commodity distribution. The G4 and PBO were able to react quickly to obtain missing APS equipment in theater or obtain augmentation from home station. The DISCOM materiel officer (MATO) section was able to work through many HQ layers to fix DODAAC and SSA supplemental address problems. The DISCOM ground safety officer (GSO) was able to obtain critical transport from Doha Director of Logistics (DOL) (Army Central Command [ARCENT]) through good networking connections and determination. All of the above were critical to the success of the division and were beyond the scope of normal operations. These innovations were critical to moving our parts and supplies through the system.

Recommendation: Train personnel to be adaptive and flexible and foster a thinking CSS environment. CSS leadership was very results/mission-oriented. Quick identification of the problem and immediate intervention ensured success. Continuing to train key leaders to take action beyond their normal scope is a critical enabler for successful LOG C² and execution. Train junior leaders to do the same. Ensure future CPXs include similar support scenarios to work through immature theater, lack of transportation, and sharing of CSS resources.

Chapter 19 Personnel Service Support (PSS)

Chapter Contents

Introduction

Topic A - Offensive And Defensive Planning Considerations

Topic B - Other Issues

Introduction

Personnel support directly affects success in combat. The requirement to provide timely personnel readiness management, casualty operations, replacement operations management, and other essential personnel services is critical. Whether committed to a forward presence or SASO mission, personnel support must be tailored to satisfy tactical and operational requirements of the commander, either Army alone or in concert with a joint or combined force. Operation IRAQI FREEDOM has tested the Third Infantry Division (Mechanized) (3ID [M]) G1 section across the spectrum of conflict.

The G1's objective of personnel support was to ensure operational success. Personnel support activities began with the initial planning of the operation through pre-deployment, deployment, war, and redeployment. Wartime personnel operations are not glamorous, but they provide vital information for the division commander and brigade commanders as they go through the decision-making processes and set priorities. Some of the challenges we faced were reconciling wartime and peacetime procedures to ensure all personnel service support (PSS) functions were covered.

The G1 section performed their doctrinal tasks including strength accounting, replacement operations, unit-manning report tracking, limited personnel actions, and liaison with the theater army personnel command. In addition, the G1 performed other non peacetime related duties including plans and orders support; policy development; limited oversight of morale, welfare, and recreation; finance; and equal opportunity.

Part of the division's success and the morale of its soldiers depended on effective personnel service support planned and provided throughout the battlespace from Kuwait City (Camp Doha) to Baghdad, Iraq. Continuous combat operations over 400 miles challenged the technical and tactical skills of personnel soldiers and leaders alike. Teamwork ultimately decided the success of the battle and how the G1 shop performed during Operation IRAQI FREEDOM.

The initial design reviews (IDRs) discussed are intended to show adjutant general (AG) leaders some critical tactics, techniques, and procedures that affected personnel service support during 21 days of continuous combat operations and the 3 months prior to crossing the LD. AG leaders should take the information contained here, update their SOPs, and teach their subordinates, peers, and supervisors what it takes to provide world-class personnel service support to the war fighter in combat.

Personnel planning began immediately to develop procedures for how we would handle postal, casualty reporting, replacement, stabilization, stop movement and stop loss

guidance, and many other essential functions. We developed force packages that determined the number and mix of personnel and where we would position them throughout Kuwait and the four different command nodes, in order to provide the most effective service for soldiers and commanders.

The Army, as a whole, does not adequately train wartime personnel operations. Our failure to do so impacts our ability to sustain and reconstitute the force. A case in point is the personnel daily summary (PDS) used for reporting numbers and MOSs of casualties.

The PDS is designed to provide the commander with a snapshot picture of the strength of his subordinate units. From this report, critical shortfalls in officer, warrant officer, or enlisted strength can be discerned, estimated casualties confirmed, and personnel replacements prioritized. Variations in the PDS format were numerous between the battalion, brigade, division, corps, and theater.

The key to making the system work and providing commanders with timely and accurate strength data is practice in garrison, as well as the field.

Chapter 19

Personnel Service Support

Topic A - Offensive and Defensive Planning Considerations

Certain offensive and defensive personnel planning considerations are key to the G1's success in planning for solid personnel architecture. The planning considerations listed below must be second nature to the G1

- Review task organization and reporting requirements
- Review scheme of maneuver for each subordinate brigade/separate battalion
- Review current personnel strengths and utilize as the base for the casualty estimate
- Develop casualty estimate for all phases of the operation utilizing the scheme of maneuver and current personnel strength
- Determine replacement priority based on commander's intent and replacement availability for each phase of the operation
- Determine G1 commander's critical information requirements (CCIR)
- Request additional replacements if casualties exceed known daily replacements
- Task organize replacement section to best support offensive operations
- Request throughput of replacements from theater to division
- Develop plan for transportation of replacements with Air Force and corps support command (COSCOM) assets

Battle-tracking is another name for situational awareness. Personnel units require additional training in this area and, consequently, the G1 and BDE S1 have no knowledge or systems in place to track the battle. At a minimum, does each soldier get a DAILY update on:

- Current phase of the operation
- Current day of the operation
- Current corps FRAGO in effect
- Significant activity last 12 hours
- Expected activity next 12 hours
- Friendly situation – battle captain
- Division personnel summary – strength management officer in charge (OIC)
- Division strength roll-up
- Current replacement priority
- Replacements/return to duty (RTDs) last 12 hours
- Replacements/RTDs next 12 hours
- Working concept plans (CONPLANS)
- Casualty estimates
- Communications status
- Taskings
- Additional information
- Challenge/password

Wartime personnel operations are not glamorous, but they provide vital information for the commander as he goes through the decision making process and sets priorities. The challenge is to reconcile wartime and peacetime procedures.

Chapter 19
Personnel Service Support
Topic B - Other Issues

Issue: Personnel manifests for air movement

Discussion: When more than one unit arrived on one airplane there were problems with the manifesting procedures in identifying the correct unit identification code (UIC) and number of personnel per unit per airplane. During the reception, staging, onward movement, and integration (RSOI) process, these problems impacted the coordination of transportation to the appropriate base camp and delayed baggage separation. This is unnecessary work for the division transportation officer (DTO) when the 3rd SSB could verify correct UIC before the plane leaves .

Recommendation: There is a need for a correct manifest done beforehand by 3rd SSB. There should be a standard program designated to build the manifests and unit UIC should be reconciled prior to departure. Provide internet access to rear personnel that are pushing soldiers forward in order for them to email the most current and accurate manifest. This would create redundancy for units with the flight commander receiving the manifest (disk & hard copy) and the manifest being forwarded to a unit point of contact via email. Or, establish a POC UIC roster for forward deployed units and forward the manifest to the forward/receiving unit, as well as, wheels up time and estimated time of arrival. Separate units should be identified on the wheels up report so bed down and transportation requirements can be coordinated prior to the units' landing.

Issue: Postal support was not slotted early in the time-phased force and deployment data (TPFDD)

Discussion: Postal support was not slotted early in the TPFDD for flow into theater. Since the assets came later, the total package of technical/tactical equipment and personnel could not be readily assembled and deployed and did not cross the line of departure (LD) with the division.

Recommendation: Postal requirements should be identified during contingency planning and annotated early on the TPFDD in order to support the division.

Issue: Mail transportation delays

Discussion: During the first 20 days of combat the division experienced numerous mail delays due to an unreliability and lack of prioritization of theater transportation assets. The theater contracted mail transportation via truck from Brown and Root from Kuwait. Due to security issue for civilian drivers and their trucks, the mail was seldom pushed on time and on several occasions did not even get pushed. The V Corps AG and mail coordinator creatively found alternative means to move the mail. This solution is NOT acceptable.

Recommendation: Guarantee up front in the same contract that the mail will be delivered the same day it arrives. Guarantee that the mail truck is reliable and dependable. Guarantee that theater has planned alternate capable mail transportation in case an emergency arises. Mail must move in a timely and efficient manner. Coalition Forces Land Component Command (CLFCC) postal planners should ensure a backup plan is identified and executable in case this situation ever happens again.

Issue: Lack of NIPRNET computers limited Internet/worldwide e-mail access to perform G1 functions.

Discussion: G1 and staff were constantly trying or waiting to get access to computers that had access to the web or worldwide email access. The G1 section had only one computer with NIPR net or worldwide email or Internet access. However, the office had an abundant need for two more NIPRNET lines.

Recommendation: Ensure all NIPRNET line requirements are known ahead of time.

Issue: Clear and timely guidance from HQDA on 1003 V stop loss and stop movement

Discussion: There was no clear or timely guidance on the stop loss and stop movement for 3ID (M) units prior to deployment to Kuwait. Numerous unnecessary hours were spent determining guidelines for stop movement and stop loss for personnel in Kuwait. After numerous inquiries over 3 months during the pre-deployment phase of the operation, guidance was slow in coming. A number of personnel (well over 100) were deployed with 3ID (M) and subordinate units who were within 60 to 90 days of a required personnel action such as ETS, PCS, retirement, school attendance, etc. The personnel who fell into this category had to be removed from theater shortly after their arrival. This required that the vacated slots either remain vacant or a back fill brought in from CONUS. The swap out was expensive (about 2300 dollars per individual in movement costs alone) and was disruptive to the conduct of smooth and efficient operations. Bottom line, late guidance cause unnecessary deployment and redeployment of soldiers back and forth from home station

Recommendation: Unless a stop loss program has been emplaced by Personnel Command (PERSCOM), soldiers who are within 120 days of a required action as outlined above should not be deployed. Without proper guidance, it is difficult to provide accurate deployment criteria to units as they plan to deploy and build, qualify, and stabilize combat crews. Higher headquarters should be stalwart in obtaining guidance on stop loss and stop movement and forwarding ASAP to operational commanders. This enables commanders to make decisions and the opportunity to have a more consistent deployment plan.

Issue: The G1 organization expanded during the operation to include areas not included in FM 12-6.

Discussion: During the operation, the scope of responsibilities for the G1 organization grew to cover areas not traditionally aligned under the G1 during peacetime operations. The following overarching functions were performed or coordinated by the G1:

Functions brought forward from Fort Stewart:

1. Enlisted strength management and officer strength management to include assignments, research and analysis, and strength actions.
2. Personnel actions to include congressional inquiries, awards
3. Retention
4. G1 plans and operations cell

Additional sections/functions that fell under the purview of the G1 once deployed included:

1. Establishing a division replacement section and liaison with the theater replacement detachment
2. Safety office
3. AAFES coordination
4. Red Cross
5. MWR
6. E-leave section
7. Show coordinator (USO)

The G1 incorporated all these section in the daily and weekly staff calls in order to ensure all the organizations were working within the commander's intent. Many of these sections deployed and needed a work area, transportation or a vehicle, phone lines, LAN access, etc. The communications/computer requirements included mobile subscriber equipment (MSE) phones and access, laptops or PCs with LAN, and mail capabilities. Whenever possible the G1 shared their non-tactical vehicles (NTVs) and limited computer assets. The G1 coordinated with the G6 who was able to provide the needed telephone and LAN access even though it was not initially planned for. The safety office worked with accident reports and helped to coordinate accident investigations. Most of their time was spent being proactive and coordinating with the G3 and G4 to help anticipate safety considerations in future operations.

Recommendation: Consider conducting planning conferences in the rear prior to deployment including all organizations at which requirements can be identified. Continue to include those organizations in communications once deployed.

Issue: Accountability of contractors.

Discussion: A challenge repeatedly encountered during Operation IRAQI FREEDOM was the attachment of civilians to the division and ambiguity regarding accountability for contractors in the area of operations (AO). There was no central office possessing information on all the contractors. This problem arose because there was no single office where all of the contractors must register. What remains a truism, however, is the necessity for contractors in the areas of responsibility (AORs). Contractors associated with the Logistics Civilian Augmentation Program (LOGCAP), the Army Materiel Command (AMC) Logistics Assistance Representatives (LAR), Department of Defense (DOD), and third-country national linguists and translators were embedded in the operation. Once contractors are integrated into the unit, they were supported and visibility was maintained by means of status reports submitted through normal military personnel channels.

Recommendation: Coordinate with all concerned and develop a contractor accountability system to ensure 100% accountability. Have civilians in process with the BCT S1 upon attachment.

Issue: Patient tracking

Discussion: The medical regulating officer (MRO), casualty liaison team (CLT) and patient administration and disposition (PAD) have difficulty tracking patients. When patients are brought into the hospital, they are not being tracked with any clarity at the division level as to where there are at any given time in the hospital or when they are released. It is unknown if the patients are in the hospital, have returned to home station or have returned to the unit. When the division medical operations center (DMOC) prepares tactical resources and combat effectiveness (TRACE) runs, they are unable to find patients.

Recommendation: Factors that affect the ability to track patients include having PAD or CLT team personnel at the Level III hospital when patients arrive. The PAD must have a plan for securing sensitive items and maintaining accountability of the soldiers as they are treated and released. The PAD or CLT must be able to know where the patients are and prepare a report that can be used to keep the patients parent unit informed on their status.

Issue: Casualty operations

Discussion: Casualty reporting/tracking needs to be emphasized within the brigade combat team. The brigade combat team generally fails to report casualties using DA Forms 1156 (casualty feeder reports), 1155 (casualty witness statements). Soldiers could have bar coded tags added to their dog tag chains (or pre-printed on the back of custom-formatted 1156s) that medics would scan when conducting MEDEVAC, and then at each level the patient could be scanned in and out and their status updated. The database could be accessed on FBCB² or TACWEB in order to provide units continuous visibility on their soldiers' status and location. Casualty management begins during the military decision-making process (MDMP) with the S1 completing a casualty estimate. The estimate must answer the questions who, what, when, where, why, and how. Furthermore, soldiers do not understand the process of reporting casualties because they are not trained. The result is delayed reports, reports not submitted using the proper forms, or not being submitted at all. The brigade and the battalion S1s generally rely on the medical personnel or facilities to track casualties early in the battle and fail to set up casualty liaison personnel. The casualty liaison team was a failed attempt to address a problem of managing casualties during combat operation. Retention NCOs were not trained nor resourced properly to effectively perform this mission. Units had their own plan; therefore, retention NCOs interfered with their existing plan. CLTs did not report due to a lack of vehicles and communications. Co-locating the S1 with C-Med provided better visibility on all Level II to possible Level III casualties.

Recommendation: The brigade and battalions S1s must ensure that soldiers are trained on casualty reporting procedures and forms. The S1 at each level is responsible to ensure that procedures are in place and that every soldier understands and is trained in casualty operations. The tactical standing operating procedures (TACSOP) must be detailed and specific in addressing casualty operations procedures. It is imperative that the S1 is involved during the planning process because the S1 is responsible for the casualty estimate. The S1 uses the estimate to anticipate future requirements. The S1 must continually assess the combat power of personnel before, during, and after operations. The S1 must be prepared to consolidate and reorganize quickly to sustain the momentum. This can only be accomplished through proper reporting and tracking. Casualty liaison teams must be established early and maintained throughout the operation to speed up the process. Casualty operations demand more manpower than a

unit is resourced to provide. It is imperative that the S1s at each level have a plan to track casualties early. One way to accomplish this mission is to send a soldier with the forward logistical element (FLE) to locate at the casualty collection points (CCPs).

Enhanced communications are a must to accomplish some critical personnel functions, such as personnel information management (from CONUS to theater) requiring deployment of only critical functions. Split-based operations, however, require careful consideration of the commander's vision and intent and in reporting casualties in a theater over 300 miles from the division rear to the corps rear.

The G1's largest challenge out on the battlefield is to ensure every leader and soldier clearly understands the communications architecture to support the division/brigade scheme of maneuver. OPOD briefs and rehearsals are the means for the G1 must drive home his/her reporting/communications plan. There are several techniques, but what is important is that BDE/BN S1s leave the sand table knowing how they will communicate with their commanders and subordinates

Practice! Practice! Practice! The more rehearsals conducted, the better the operation. The G1/S1 "rock drill" was conducted during reception, staging, onward movement, and integration (RSOI) and again in preparation for combat operations. It was used when the plan calls for major task organization changes that had be well synchronized. Typically, all BDE S1s gather around a terrain board. The deputy G1 and operations/plans officer lead the rehearsal. All S1s brief how their part supports the operations plan.

Cross talk and planning refinement from the division G1 to subordinate BDE S1s and separate S1s was a must throughout the operations. Without this communication, the results are an unsynchronized AG community often out of touch with the operational picture and frequently unaware of the location of other personnel resources on the battlefield. Several procedures were implemented to overcome this shortfall. G1 made every effort to conduct G1/S1 conferences to discuss standardized reporting times and all other essential personnel service support functions during wartime.

Chapter 20 Combat Health Support (CHS)

Chapter Contents

Introduction

Topic A - Class VIII

Topic B - Medical Operations

Topic C – Medical Evacuation (MEDEVAC)

Topic D - Medical Nuclear/Biological/Chemical (NBC) Defense Material

Topic E – Army Prepositioned Stock (APS)/New Equipment Fielding

Topic F - Medical Communications

Introduction

During Operation IRAQI FREEDOM (OIF), the Third Infantry Division (Mechanized) (3ID [M]) evacuated over 200 soldiers to Level III medical care. The conduct of continuous offensive operations over extended distances forced the Marne medics to rely primarily on air MEDEVAC to move patients from point of injury and forward support battalion (FSB) medical companies to move patients to the supporting mobile army surgical hospital (MASH) and combat support hospitals (CSH) for Level III care.

In addition to the doctrinal complement of corps medical assets, the supporting medical brigade also attached an area support medical company that operated non-doctrinally, executing division level missions in support of FSBs and the main support battalion (MSB). The medical brigade placed three forward surgical teams (FST) in direct support (DS). These FSTs were then pushed to each FSB. The 507th Air Ambulance Company was attached to the division for logistics and maintenance to the 4th Brigade and operated from division airfields and forward arming and refueling points (FARPS).

Chapter 20 Combat Health Support Topic A - Class VIII

Issue: Critical Class VIII shortages during the initial phases of the deployment.

Discussion: Sick call items and controlled substances (R&Q) became critical for all units upon arrival. Units did not deploy with sufficient amounts of sick call items. Units were advised to bring R&Q items only for those medical equipment sets (MESs) they were bringing from Fort Stewart. This guidance was provided to 3ID(M) by United States Medical Materiel Agency (USAMMA) based on their assurance that APS MES would contain R&Q items. APS MES contained no R&Q items.

Recommendation: Units must deploy full sick call MES as “to accompany soldier” (TAT). In addition, it is highly recommended they purchase and deploy at least one USARID drug set as TAT. The sick call items contained in these sets should sustain units until line item requisition is established. Regardless of USAMMA guidance, units should deploy TAT all R&Q items for organic MES.

Issue: Planning for the initial requirements of Class VIII is critical from a theater perspective.

Discussion: 3ID (M) tripled its population in a little over a month. The theater was not able to handle the initial Class VIII supply requirements. The Doha warehouse (CSA contractors) refused to allow receipt of Class VIII under a different Department of Defense, Defense Assessment Center (DODDAC). This created a situation that required circumvention by 3ID (M). 3ID (M) started ordering supplies using a specific emergency DODDAC issued by USAMMA. Medical logistics planners found an alternate delivery site known as the central receiving supply point (CRSP). This enabled 3ID (M) medical logistics to flow to this address under a different DODDAC.

Recommendation: Theater planners need to anticipate/plan Class VIII requirements. This needs to include some mechanism for ordering all types of Class VIII (R&Qs, sick call medications, etc.). Class VIII accounts and responsibility need to be clearly defined prior to deployment of units into an area of operation.

Issue: Internet connectivity in remote areas inhibits the ability to operate Telecommunication Access Method (TCAM).

Discussion: Poor Internet connectivity in remote locations creates difficult transmissions of Theater Army Medical Information System (TAMMIS) and TCAM data. Units must provide command emphasis on providing their medical assets, platoon through company, dedicated access to local area network (LAN) line connectivity in order to pass requisitions.

Recommendation: Medical companies and the division medical supply officer (DMSO) must be in close proximity to and have dedicated LAN line connectivity with the small extension node/large extension node (SEN/LEN) in order to pass successful Class VIII requisitions.

Issue: Initially, enemy prisoners of war (EPW) combat configured loads (CCLs) were thought to be a requirement at various locations on the battlefield, specifically the EPW collection points.

Discussion: EPW CCLs were not required as the division initially predicted. Class VIII needs for EPWs were filled utilizing organic MES. Resupply was facilitated through normal medical logistics channels.

Recommendation: Although not needed during this operation, it is still recommended that units predict, build and push EPW Class VIII CCLs in combat environments like Iraq. EPW Class VIII requirements can quickly exhaust medical units’ basic load (UBL) of Class VIII and overcome medical units assigned the task of EPW care.

Issue: Combat lifesaver (CLS) bags need to be up-to-date and on hand prior to deployment.

Discussion: Many units did not bring CLS bags to the theater. Additionally, many units did not have adequate numbers of CLS bags prior to deployment. This created a high initial demand for CLS bags for each wave of units that deployed into theater. Procurement times for this particular item averaged over a month before delivery to the unit.

Recommendation: Commanders must ensure that CLS bags are inventoried monthly and the appropriate quantity is on hand to perform the unit's mission.

Issue: Prescription medication re-supply.

Discussion: Soldiers deployed with 90 days of special medications. This was a mandate put in place by the garrison hospital. At the 70-80 day mark, soldiers started requesting refills. This created a difficult situation due to the lack of medical logistics infrastructure in country. As a quick fix, providers attempted to send soldiers to the Camp Doha Clinic (ARCENT-Kuwait). This system worked for a while until the remaining brigades and non-divisional units started arriving. The system was unable to handle the special medication demand of the population of soldiers. Theater level planners assumed that each soldier would bring enough special medications for the entire deployment.

Recommendation: Soldiers deploy with 180-day supply of special medication. A solution for the long-term appears to be enrollment in the online pharmacy program prior to deployment. This will provide a "sure thing" in the event that special medications are not available through normal distribution channels at the end of the 180-day supply. From a theater perspective, a plan must be implemented to fill special medication prescriptions immediately after deployment based on situational variables. For very large deployments, a pharmacist may need to be inserted into the medical logistics channel (medical logistics company/battalion) early on in order to facilitate high demand special medication re-supply. Theater planners must communicate requirements to CONUS-based medical treatment facilities (MTF) prior to unit deployment.

Issue: Attached echelons above division (EAD) unit Class VIII requirements overwhelmed the DMSO during reception, staging, onward movement, and integration (RSOI) and sustainment operations in the camps.

Discussion: At one point, the 3ID (M) DMSO was the only Class VIII supply support activity (SSA) operational north of Camp Doha. As 3ID (M) began gaining EAD level attachments without organic medical support, Class VIII requirements overwhelmed the DMSO.

Recommendation: Medical logistics assets need to be in place early and alongside division and EAD units to provide the additional Class VIII support associated with the attachment of unresourced EAD units.

Issue: Requirements for environmental threat prophylaxis (Doxycycline) were not predicted, procured, and issued by theater.

Discussion: Soldiers were required to take Doxycycline as Malaria prophylaxis. Sufficient Doxycycline was not available in time for initial issue and subsequent resupply.

Recommendation: Theater planners must predict known environmental threats and provide appropriate prophylaxis in the required quantities.

Chapter 20

Combat Health Support

Topic B – Medical Operations

Issue: Need current up-to-date medical intelligence in order to get the best product out of the planning process.

Discussion: Although somewhat useful, the Armed Forces Medical Intelligence Center (AFMIC) did not prove to be an up-to-date source of information for the medical planning process. Some of the information was outdated by as much as ten years. The majority of the information on military medical infrastructure was based on a “best guess” response.

Recommendation: AFMIC should continue to improve its information database by working with additional information sources (special operations forces, other governmental agencies, non-profit organizations, etc.). Internal information queries by AFMIC can identify files that require updated profiles. The organization needs to offer more real-time medical intelligence emphasizing the current force infrastructure and the medical logistics support channel (i.e. fixed hospitals and supply channels supporting certain military units).

Issue: Units performing RSOI must ensure appropriate coordination is made with RSOI and receiving units.

Discussion: Units responsible for RSOI continually sent units (FSTs, ASMCs, MASH) to the wrong destination. Units continued to show up at units with little or no notice and usually the wrong location. This caused a sense of confusion among all parties involved and reflected poorly on the receiving unit. Updates on RSOI/arrival of units were normally given upon request, not by any pre-established update timeline.

Recommendation: Theater-level RSOI units must ensure daily updates are forwarded to receiving unit points of contact (POCs) in order to achieve continuity. Understanding that arriving units do not always arrive as scheduled, daily updates would allow the flexibility for subordinate units to adjust timelines. During a high volume of unit RSOI, this will allow receiving units to continually update subordinate commands on the arrival of units.

Issue: Medical personnel need to categorize patients appropriately for medical evacuation.

Discussion: Medical personnel categorized patients as “litter-urgent” the majority of the time. This categorization was not necessarily the appropriate classification of the patient. It became a “blanket categorization” for medical personnel in the triage process. In our particular situation, it did not matter from an evacuation perspective because of the sole reliance on air MEDEVAC. Inaccurate categorization effects did not surface until they reached higher command channels. Anxiety concerning casualties

tends to be much more prevalent among commanders when categorization is severe in nature.

Recommendation: On-site medical personnel need to be able to categorize casualties based on guidelines set forth in appropriate doctrine. This will provide personnel involved in the evacuation process with the correct information. This, in turn, will enhance the ability of evacuation personnel to make the appropriate decisions on disposition of the patient.

Issue: Military police (MPs) units require external medical augmentation/support in order to care for enemy prisoners of war (EPWs).

Discussion: Military police (MP) units had great difficulty providing medical care to EPWs with their internal medical resources. MPs were not able to provide medical care for the wide range of EPW medical needs. EPWs had injuries ranging from gunshot/fragmentation wounds to broken bones. This particular range of injuries requires medical treatment commensurate with Level II capabilities coupled with a forward surgical team (FST). In certain situations, the MPs received EPWs from a supporting forward support medical company (FSMC)/FST after surgery and post-op were complete. Based on environmental conditions (desert, arid conditions, lack of shaded area), the MPs found it very difficult to care for EPWs after the designated post-op period. In several instances, EPWs had to be transported back to the supporting FST or higher level of care in order to regain stabilization.

Recommendation: Plan to attach some type of medical augmentation package to the MP units that have an EPW holding mission. Recommended package components: holding capability, treatment capability, evacuation capability, and either immediate access to an FST or the collocation of an FST.

Issue: Delivery of humanitarian assistance (HA) supplies needs to be coordinated down to the lowest level.

Discussion: HA supplies consistently arrived with little or no notice before delivery. Many times HA supplies were delivered without ground components' knowledge. This caused a great deal of confusion in determining disposition and storage requirements for HA supplies.

Recommendation: Prior coordination of HA supplies needs to be communicated down to the lowest level with prior notice in order to facilitate disposition of supplies.

Chapter 20

Combat Health Support

Topic C - Medical Evacuation (MEDEVAC)

Issue: Synchronization of MEDEVAC in training versus peacetime. Many planners believe that MEDEVAC aircraft "hop along behind the BSA during movement."

Discussion: FSMCs must ensure that units understand the availability of MEDEVAC is limited to ambulance exchange point (AXP) and rearward locations in most instances (unless armed escort or a secure area is available). For planning purposes, MEDEVAC aircraft are not able to launch from the FSB until the battalion support area (BSA) is set.

Issue: Communication with MEDEVAC systems.

Discussion: In training, range control (Kuwait) facilitated all MEDEVAC evacuations using the 1042nd out of the Oregon National Guard. This resulted in a certain complacency as MEDEVAC units deployed into theater. After approximately one month, deploying MEDEVAC units had failed to complete a communications synchronization exercise in order to test current systems both for the requesting units and the MEDEVAC unit.

Recommendation: Test MEDEVAC communications channels as soon as possible in order to ensure operability of both the requesting units and the receiving units, both “in the red and in the green.”

Issue: Command and control (C²) relationships concerning MEDEVAC units.

Discussion: In this instance, the MEDEVAC unit was totally reliant on the 31D (M)’s aviation brigade for maintenance and support. This was due to the fact that the brigade had the most robust UH-60 maintenance package in theater. The corps continued to attempt to place the unit in DS of the division. This created a difficult situation for the DMOC and the aviation brigade. Corps did not have the maintenance assets to support the MEDEVAC. Aviation brigade was reluctant to assist due to the C² relationship. DMOC continued to attempt to serve as a broker between the two organizations. Eventually, corps attached the MEDEVAC unit to division for “maintenance and logistics support.”

Recommendation: Corps headquarters elements must attach corps units operating in direct support of division units. This will alleviate numerous administrative as well as logistical issues. Bearing in mind, the corps can always detach units depending on a change in mission or requirement.

Issue: Synchronization of MEDEVAC with aviation brigade FARP/jump FARPS.

Discussion: Aviation brigade and division support command (DISCOM) experienced problems synchronizing jump times and operational start times for FARP operations concerning MEDEVAC employment. The aviation element has a different emphasis during the fight, so the FARPS are normally located to facilitate a constant forward movement, versus a rearward evacuation movement. Throughout the fight, MEDEVAC continued to evacuate to the nearest Level III facility, normally located rearward.

Recommendation: The aviation brigade FARP elements may have to delay jumping assets forward until Level III facilities have echeloned and established forward. Another option is to utilize internal MEDEVAC FARP assets to form stand-alone locations. This option requires security or additional combat power from the main/supporting effort in order for this asset to stand alone. Planners may plan to use any fixed point on the ground where the MEDEVAC assets can “piggy back” on existing combat structure (i.e. fuel points, convoy support centers, maintenance collection points).

Issue: There was some confusion concerning MEDEVAC coverage during movement of DS company.

Discussion: MEDEVAC coverage during DS company movement must be coordinated prior to the movement of the DS company. The DS company moved all assets forward

to new location and there was confusion on who had coverage. Eventually, the DS company was contacted and it was determined that the general support (GS) company was responsible for coverage during movement. At the time the GS company's location was approximately 1.5-hour flight time. The confusion caused about a 20-30 minute delay, which, in turn, caused a 2-2.5 hour response time.

Recommendation: Evacuation battalion/medical companies must coordinate with aviation brigade elements in an effort to synchronize aviation movements with MEDEVAC coverage to alleviate lapses in coverage during movement. Ensure the coverage plan is communicated to supported units.

Chapter 20 Combat Health Support

Topic D - Medical Nuclear/Biological/Chemical (NBC) Defense Material

Issue: Medical nuclear, biological, chemical, defense material (MNBCDM) storage requirements.

Discussion: Storage capability is not present at the brigade and division levels for storage of the MNBCDM. Although the main support medical company can manage to store minimal amounts using resources "out-of-hide," additional refrigeration is required for the entire division support area activity.

Recommendation: Each brigade and divisional support battalion requires some type of temperature-controlled environment (reefer van) for storage of NBCDM.

Issue: Issuing MNBCDM to the individual soldier.

Discussion: Some units independently distributed MNBCDM without higher headquarters guidance. This created accountability, environmental control, and safety issues. Some forward support battalions (FSB)/brigade surgeons issued the MNBCDM down to the individual soldier level. This increased difficulty in accounting for the materials, which were to be reported on a weekly basis. It also created an unstable storage environment for the chemical compounds. In addition, there are safety considerations for the soldier should there be an accidental auto-injection, a situation that did occur during individual issue.

Recommendation: Hold MNBCDM at the FSB level until the theater directs issuance to the soldier level. This will guarantee the chemical's effectiveness and accountability, as well as decreasing the likelihood of an individual accidentally auto-injecting.

Chapter 20 Combat Health Support

Topic E - Army Prepositioned Stock (APS)/New Equipment Fielding

Issue: New equipment fielding before deployment.

Discussion: Equipment that was needed or scheduled to be fielded to units before deployment had significant training and fielding issues based on timelines for deployment. For example, the Chemical Biological Protective Shelter System (CBPSS) was scheduled to be fielded to the division in November 2002. The majority of 3ID (M) units deployed in the mid-January to mid-February 2003 time frame. The system was fielded in mid-February 2003 and training was conducted in Kuwait. Additional units (area support medical companies, forward surgical teams) continued to enter the Central Command (CENTCOM) theater without the proper training.

Recommendation: With the current operations tempo (OPTEMPO), based on "The War on Terrorism," contractors/government fielding agencies need to create a "normal" versus an "accelerated" timeline. This will create two timelines that are dependent solely on the likelihood of a unit's deployment timeline. More importantly, these timelines need to be communicated all the way down to the user level. The units mentioned above should have been trained in CONUS between the months of December 2002 to January 2003.

Issue: R&Q (controlled substance) medications need to be inventoried as a part of the APS set.

Discussion: The R&Q medications were not located with the APS medical equipment sets (MES). This created significant concerns in preparation for combat operations. The R&Q medications were clearly identified as an issue, early on, and the issue was not rectified in a timely manner.

Recommendation: USAMMA needs to ensure that R&Q medications associated with APS sets are inventoried on a monthly basis and that the number matches the number of MESs based on allocation.

Chapter 20

Combat Health Support

Topic F - Communications

Issue: In a fast-pace operation, it is critical to execute long-range communications. Divisional medical companies are ill equipped for long-range communications (distances beyond 30 kilometers).

Discussion: 3ID (M) medical planners voiced continued concerns about the long-range communication capability of both the forward support and main support medical companies. This directly impacted the ability to communicate with higher headquarters in both division and corps. They currently have the AN/GRC-213 (AM) radio as a part of their MTOE. These radios are antiquated and repair parts are difficult to obtain. Most of the medical companies (3 of 4) deployed without operational AN/GRC-213s after having parts on order for as much as three months prior to deployment. They were forced to rely on the brigade combat team (BCT) tactical operations centers (TOC). This is the only long-range communications capability in the BCT that offers a high frequency (HF) radio. The medical brigade attempted to mitigate this shortfall by issuing Iridium phones to each medical company. These phones can also be unreliable due to satellite availability.

Recommendation: Reliable long-range (30-100 kilometers) communications must be embedded into the division medical companies in order to increase effectiveness.

Issue: A universal HF/long-range radio is needed in corps and divisional medical units down to the FSMC level (to include DMOCs).

Discussion: Division medical operation center (DMOC) has much the same issue as the medical companies. The medical brigade issued an Iridium phone to the DMOC, as it did to the medical companies in the division. Additionally, the medical brigade also issued an HF radio (GPR-117) to the DMOC a few days before the impending engagement. This created two problems. The first was a training issue and the second was a universality issue. The medical brigade did not have a plan to train units on the new radio before use. In addressing the second issue, there are many different medical units in the corps level structure. Most of these units possess several different types of communications equipment. For purposes of this operation, the division elements can only talk to the units that specifically have a GPR-117. This created problems in communicating with the various corps medical assets.

Recommendation: Purchase a long-range system that is universal and is embedded at the FSMC level and above.

Issue: Communications between units with different headquarters is needed at the earliest possible juncture.

Discussion: 3ID (M) planners were not allowed to communicate with units that belonged to other headquarters (III Corps, V Corps) until the final moments of the operational planning. This caused a great deal of confusion when units initially arrived in the area of operation. 3ID (M) planners were unaware of the full capabilities of the arriving units as well as the requirements for initial employment.

Recommendation: Headquarters need to increase flexibility in allowing units to communicate capabilities early on, as well as requirements upon arrival.

Chapter 21 Equal Opportunity (EO)

Introduction

The Army's equal opportunity program continues to function regardless of the unit's geographical location.

Lessons Learned

- When the IMPAC cardholder in the division equal opportunity (EO) office deploys, the division comptroller should allocate funds normally given to the division EO office to the rear operations equal opportunity advisor (EOA).
- For the division EO office to effectively run in a field environment, vehicles must be provided so the office can run independently.
- The HHC, Third Infantry Division (Mechanized) (3ID [M]) commander should request changes to the modified table of organization and equipment (MTOE) removing all division and brigade EO personnel from the table of distribution and allowances (TDA) document and adding all division and brigade EO personnel to the MTOE.

Issue: Money was not allocated to the rear operations equal opportunity advisor (EOA) for ethnic observances and EO classes to be conducted at Fort Stewart during Operation IRAQI FREEDOM

Discussion: The Black History Month observance, which was scheduled for 20 FEB 03, was in the planning stage when the division EOA, who manages the IMPAC account, was deployed to Kuwait. The IMPAC card was frozen upon her departure by the division comptroller. However, transactions already completed but not submitted to the comptroller went unpaid. These expenses included engraving on five plaques that totaled \$10.00. The programs for the observance could not be submitted to the Defense Print Plant (DAPS) for completion. The rear operations EOA paid the extra cost of the engraving fees out of pocket. The garrison S4 office would not pay for the programs to be printed for the observance. The garrison EOA along with the DIVARTY EOA printed the programs (300 copies) on printers in their offices.

Recommendation: When the IMPAC cardholder in the division EO office deploys, the division comptroller should allocate funds normally given to the division EO office to the rear operations EOA. The dollar amount the division pays for each observance is \$1200. This will ensure that any ethnic observances conducted during deployments will remain first class events. The EO Representative Courses (EORC) and Small Group Facilitator Courses (SGFC) that are conducted during deployments by the rear operation EOAs should be fully funded by the division. Books, agendas, culture block sampling, and certificates are necessary for the successful completion of these classes.

Issue: No transportation for Marne Visitor Bureau (MVB) office personnel

Discussion: When arriving in the deployment area, the division EO office personnel had no transportation. Under the name, Marne Visitor Bureau (MVB), the EO program manager secured two vehicles prior to movement from Camp New York to the tactical assemble area (TAA). The vehicles were obtained using the MVB name, not EO. The vehicles, although a definite plus for movement, did not accommodate equipment used

by the MVB; therefore, the assistance of 703rd Main Support Battalion (MSB) was required to move MVB and EO equipment.

Recommendation: For the division EO office to effectively run in a field environment, vehicles must be provided so the office can run independently. The division EO office must be free to travel to other camps in support of the brigade-level EO advisors. The vehicles will allow EO personnel to become self-sufficient and not have to rely on other offices for their transportation needs. At a minimum, HHC, 3ID (M) MTOE should allocate two high mobility multipurpose wheeled vehicles (HMMWVs) for movement of personnel.

Issue: EO not on the HHC, 3ID (M) MTOE, but on TDA

Discussion: The HHC, 3ID (M) MTOE does not reflect any EO positions. Currently EOAs are covered on the TDA document. On the "Definition of ASICO" sheet portion of the MTOE, it lists the EO officer under F5 (which for enlisted is postal). It does not show the additional skill identifier (ASI) for EO, which is a "Q." The division EO office has no vehicles and equipment to support the commanding general's EO program in a field environment. Had it not been for assistance from outside sources, the division EO office would have been unable to function in a field environment.

Recommendation: The HHC, 3ID (M) commander should request changes to the MTOE, removing all division and brigade EO personnel from the TDA document and adding all division and brigade EO personnel to the MTOE. Based on experience from the deployment to Kuwait, a compiled list of assets necessary for the EO office to function in a field environment is provided. Items specific to the MTOE are in bold letters:

- **Tents** - three, NSN: 8340-00-566-7398, to include poles, pegs, light sets, and flooring. One tent will be used for office operations and two tents will be used as sleeping areas (male/female).
- **Camouflage nets w/poles** – three, line number: C89145 - woodland light weight radar SCAT; three, line number: C89070 - woodland/desert (support system)
- Cots – four, to accommodate three enlisted and one officer
- Field desks w/chairs – four, to accommodate three enlisted and one officer
- Computers - two laptop computers
- Printers - one
- Copy machine - one portable machine
- **Facsimile machine** – one, lightweight digital fax (AN/UXC-7), line number: L67964
- **HMMWV** – two, line number: T61494 - truck utility: cargo/troop carrier 1 1/4-ton 4x4 W/E. The cargo HMMWV will provide necessary riding space and enough cargo space for supplies and equipment to accommodate the division EO office.
- **CONEX** – one, for storage of equipment in both garrison and field environment

- **Generator** – 10 k

Digital non-secure voice terminal (DNVT) with digital data port – one, line number: TA-1042A, for communication with garrison and field offices during deployment

Night vision goggles – four, AN/PVS-7B, line number: N05482

Reeling machine cable hand - two, RL-39, line number: R59160

Reel equipment - one, CE-11, line number: R56742

Telephone wire with reel - two, line number: T31872, MX-10892/G

Light set general illumination - one, 25 outlets, line number: L63994

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Chapter 22

Unit Ministry Team (UMT)

Introduction

During Operation IRAQI FREEDOM the division deployed minus three battalion UMTs. Department of the Army Chief of Chaplains (DACH) filled the vacancies prior to the units departing the camps in Kuwait. The replacements ranged in experience from two first term captain chaplains to one senior major chaplain. All three were sent to battalions and did an excellent job of providing religious support (RS). The commanders in each unit took assets out of hide to recourse their UMTs since they did not deploy with section equipment. The chaplains had to quickly integrate into the units and “find their space.” It worked well.

There were some instances where the UMTs could have been more effective had they been given their authorized equipment. Units often saw the chaplain’s equipment as “float” and took their modification table of organization and equipment (MTOE) equipment to fill other shortages or loss. This degraded the UMT's ability to move and communicate and provide RS to their units. Their success was based more on the determination of the individual UMT than on the unit finding other resources to draw from.

The slice UMTs and separate battalion UMTs were task-organized to support the BCTs during their fight. Their presence in the forward area support team (FAST) and main aid station (MAS) enabled the BCTs to provide better RS when they took casualties. Memorial ceremonies took a variety of types. Some were done at company, battalion, and brigade level. Each was designed and conducted according to the needs and capabilities of the unit. In each case, the UMT supported the requests and needs of the unit.

Overall the UMTs did an outstanding job of being proactive and supporting the command with RS as far forward as possible. Many came under direct and indirect fire in order to provide RS. Small arms and/or shrapnel struck a number of UMT vehicles. Incredibly no one was injured. God was providential in allowing them to be far forward without being seriously injured.

Lessons Learned

- UMTs need to deploy with all MTOE equipment and retain their use during combat operations.
- UMTs will need Force XXI battle command brigade and below (FBCB²) and computer capability to coordinate RS across the battlefield
- Catholic extraordinary ministers of the Eucharist (EMEs) are necessary to provide RS to battalion level.
- Utilize attached and direct support (DS) UMTs far forward during combat operations to enhance RS to casualties.

Issue: Doctrinal use of slice UMTs (1-3 ADA, 103rd MI, 123rd SIG)

Discussion: Army doctrine places UMTs at casualty collection points and/or aid stations during combat operations. If not integrated into BCT religious support plans, these UMTs will be underutilized, traveling apart with their trains, unable to get to the majority of their soldiers, and unavailable to provide RS to casualties.

Recommendation: Recommend clarification in Army doctrine by Combat Developments Directorate, United States Army Chaplain Center and School, of the following: 1) During phased combat operations these UMTs should be task-organized by division to the BCTs for appropriate phases and weighted to the main effort, and 2) Religious support plans in the BCT should include guidance for moving these UMTs to their task-organized companies throughout the division during the time spent in assembly areas or for long halts in attack positions.

Issue: UMTs need to be on FBCB² distribution plan for Third Infantry Division (Mechanized (3ID [M]))

Discussion: The ability to communicate on the battlefield is crucial to the timely provision of RS to casualties, both killed in action (KIA) and wounded in action (WIA). UMT assessment of soldier morale, combat readiness, and intervention in cases of battle fatigue are all improved with the situational awareness and text messaging capabilities of the FBCB². UMTs already have table of organization and equipment (TOE) requirements for FBCB² in all digitized units and the currently fielded software for FBCB² has a request for RS drop-down dialogue box under "Log Call for Support." UMTs also have requirements for communication capabilities equal to command and staff elements in all current basis of issue plans (BOIPs) and the objective force.

Recommendation: Provide MTOE authorization for all UMTs in the 3ID FBCB² distribution plan.

Issue: MTOE authorized communication equipment unavailable to some UMTs.

Discussion: Some TF UMTs did not receive their MTOE authorized SINCGARS during preparation for combat in Kuwait. There is a large element of risk involved when the UMT, one of the most mobile staff sections in the command, moves about the battlefield without communication. UMT vehicle SINCGARS have both Department of the Army (DA)-level TOE requirements and major Army command (MACOM) MTOE authorizations in all combat units. Provision of RS becomes much more difficult when authorized equipment is not made available to UMTs. Army doctrine and Army training and fielding plans assume UMTs will have access to all required/authorized equipment.

Recommendation: Task forces should not pull MTOE authorized communication equipment from UMTs to provide communication capabilities to other users who do not have demonstrated requirements or MACOM authorization.

Issue: Automation requirements

Discussion: UMTs had requirements for access to computers and other automation devices during combat operations. Often, the only means of communication with the division UMT was by tactical website (TACWEB) reporting. Automation devices are not reflected as requirements in the TOE.

Recommendation: Combat Developments Directorate, United States Army Chaplain Center and School should capture lessons learned from the 3ID (M) combat experience in Iraq to provide justification for TOE requirements and/or changes to doctrine.

Issue: Religious support to battle-fatigued soldiers and small units suffering WIAs and KIAs.

Discussion: UMTs spent a large amount of time providing RS to small units between operations involved in close combat. This activity was not adequately planned for, trained, or rehearsed at home station or at NTC. In most cases UMTs fell back on orientation training received on battle fatigue in the Chaplain Basic Course. The UMTs did what they could to encourage and sustain the fighting morale of soldiers who experienced the effects of killing large numbers of enemy soldiers at close range. An unexpected result of this RS was the effect upon the UMTs themselves. They needed to find time to pace their ministry and ways and means to refresh their own morale and spirit.

Recommendation: The United States Army Chaplain Center and School Combat Developments Directorate, in concert with the Training Directorate, should interview 3ID(M) UMTs and develop a more aggressive and intensive course of action for training UMTs. This should occur in both the Officer and Enlisted Training Divisions. Training should reflect guidance for the debriefing of UMTs and "who ministers to the ministers."

Issue: Memorial ceremonies.

Discussion: Memorial ceremonies were conducted at a variety of places and times during combat operations. Some commanders decided to wait until they reached Baghdad before conducting ceremonies. Others held their ceremonies soon after the loss of a soldier. All were based on mission, enemy, terrain, troops, and time available (METT-T) and until the BCTs reached their planned limit of advance. Appropriate honors were rendered when troops were not fully engaged in combat and when a large amount of soldiers could be assembled without a high degree of risk from indirect fires. A couple of BCTs held a ceremony following hostilities in addition to the ceremonies held earlier at battalion or company levels.

Recommendation: Sustain.

Issue: Placement of UMTs on the battlefield.

Discussion: When the units experienced the majority of KIA/WIA, no repositioning of UMT assets was necessary due to prior planning and placement of UMTs. Soldiers, both KIA and WIA and those in proximity to these events received timely RS. 1st BCT and 2nd BCT had received additional UMT assets for combat operations. Separate battalion UMTs were placed in the brigade support area (BSA) for organic support of their own unit assets with a "be prepared to" mission to support casualty care at Charlie Med and to cover the BSA when the forward support battalions (FSB) UMT moved forward with the forward logistics element (FLE). Some utilized their slice UMTs forward as needed. These task organizations were published in both division and some BCT FRAGOs when appropriate and in all cases coordinated with the commands involved. Other UMTs from supporting units were task organized for particular phases and efficiently came under control of the gaining BCT for support and reporting. The brigade

chaplain to commander and brigade chaplain to brigade chaplain coordination is critical to the success and effectiveness of attached or OPCON UMTs.

Recommendation: The division chaplain should sustain this kind of support of the division main effort by providing task organized UMTs to strengthen RS and shorten response time to critical incidents. Direct and general religious support are both enhanced and more effectively use the UMT assets available.

Issue: UMT integration in TF and BCT home station and NTC training.

Discussion: BCT UMTs were fully integrated in Marne Focus and NTC, to include the full utilization of MTOE equipment (M998 and SINCGARS). UMT participation in the BCT/TF military decision-making process (MDMP) rehearsals, and the aggressive placement of UMTs forward on the NTC battlefield is directly related to their ability to execute UMT battlefield tasks during combat operations.

Recommendation: Sustain full integration in field training for UMTs, to include participation in the Leader Training Program prior to NTC deployments.

Issue: Catholic coverage during combat operations

Discussion: Two Catholic priests were assigned to the division. One was in 1st BCT the other in 2nd BCT leaving 3rd BCT and all attachments without dedicated Roman Catholic (RC) support. During combat operations the Catholic priests could not be moved across the battlefield in a timely manner due to the lethality of the enemy and the distances involved. Only after reaching Baghdad were RC services able to be scheduled for other units.

Recommendation: Units must develop a program at home station to recruit and train EMEs to support RC soldiers during combat operations.

Chapter 23 Nuclear, Biological, and Chemical (NBC)

Chapter Contents

Introduction/Lessons Learned

Topic A - Deployment

Topic B - Force Modernization

Topic C - Maintenance

Topic D - Operations

Topic E - Modification Table of Organization and Equipment (MTOE)

Introduction

During deployment to Operation ENDURING FREEDOM and combat operations in support of Operation IRAQI FREEDOM there were numerous lessons learned in the NBC defense area. The Joint Warning and Reporting System (JWARN) and Force XXI battle command brigade and below (FBCB²) were significant upgrades that greatly facilitated and accelerated the NBC warning and reporting system.

Lessons Learned

- NBC operations/logistics require direct commander/leader involvement.
 - More emphasis needs to be placed on individual and collective NBC skills. NBC noncommissioned officers (NCOs) and NBC defense officers should not be the only ones knowledgeable in NBC skills.
 - M93/M93A1 NBC reconnaissance maintenance contractor support does not work in a wartime environment.
 - All units need to establish and deploy with a protective mask and not rely on theater logistics.
 - JWARN is a great NBC warning and reporting and analysis tool; however it becomes a “stand alone” system, incapable of forwarding reports when units are on the move. Key connectivity modifications are required.
 - FBCB² is a great tool but needs modifications in order to facilitate chemical downwind messages (CDMs) and NBC reports.
 - Many civilian contractors came to the division without chemical defense equipment (CDE), resulting in the division chemical section and units having to provide all of the equipment.
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Chapter 23

Nuclear, Biological, and Chemical (NBC)

Topic A - Deployment

Issue: Shortages of CDE at unit level were not identified until deployment or after deployment.

Discussion: Much of the data on the unit status reports (USRs) prior to deploying was incomplete or incorrect upon deployment. For example: There were shortages of 1st set boots, gloves, and mask filters. Many units were required to use the division 2nd set boots and gloves in order to equip their units with their 1st set. This necessitated the division chemical section ordering 10,000 plus boots and gloves after entry into theater, thereby putting an unexpected stress on the theater logistics system. In many cases decontamination kits and other lot numbered items (requiring tracking of expiration dates) had expired and required emergency requisitions prior to deployment.

Recommendation: Move all CDE management to installation level. Place the annual CDE dollars (approx 1.4M) under division chemical control for execution by the Directorate of Readiness (DOR) warehouse. All stocks are maintained in the DOR warehouse to include the following items. joint service lightweight integrated suit technology (JSLIST), boots, gloves, helmet covers, M291, M295, M100, and M256A1.

Issue: JSLIST fielding, distribution plan, and execution.

Discussion: The division as a whole deployed with units signing for their JSLIST suit from Fort. Stewart. In many instances the soldiers that signed for their individual suits were not sized properly by their units. There were soldiers that had not been trained on the wear, use, and specifics of the suit IAW division guidance published in multiple orders requiring the above be completed prior to 1 July 02. In addition, many later deploying soldiers did not have any suits at all when coming from Fort Stewart and Fort Benning. It was directed in the deployment order that every soldier deploying would have two sets of JSLIST suit in hand prior to deploying.

Recommendation: Retrain unit level NBC NCOs on the proper sizing of the JSLIST suit. The sizing of the suit is not based on the size of the soldiers' desert camouflage uniform (DCU). Unit level NBC NCOs should maintain a tracking system to ensure that every soldier deployed had a JSLIST suit. Unit level NBC NCOs should train their units on the proper wear of the suit (soldiers were still wearing hoods with the JSLIST). There are tapes available for the units to sign out from division chemical. All units must properly size newly arrived soldiers (within 10 days of arrival) to include proper sizing of other individual protective equipment (IPE) items (mask, boots, and gloves).

Issue: Protective mask maintenance and fitting.

Discussion: The division as a whole, not just the division tactical command post plus (DTAC[+]), had problems with proper mask maintenance and fitting. Significant numbers of soldiers had been issued masks, but not fitted and tested with the Protection Assessment Test System (PATS) IAW FS Reg 525-1. Many units did not deploy with replacement Class IX parts to repair and maintain their masks. Soldiers had no knowledge of the M41 PATS. Soldiers were allowed to deploy without proper preventive maintenance checks and services (PMCS) being conducted on their protective mask. All of these unit level shortcomings potentially endangered soldiers'

lives. Finally, deployed commanders failed to identify and notify the leadership of significant mask problems.

Recommendation: Commanders and leaders at all level must emphasize mask maintenance. Add a check of the PATS test roster to the Marne Inspection Program (MIP). Require a 100% mask inspection of all battalion protective masks as part of the MIP similar to an operational readiness inspection (ORI). Mask sizing should also be added to the standard requirement code (SRC) as units prepare to deploy.

Issue: Units did not deploy with their required CDE as instructed to do so.

Discussion: Prior to deploying to Kuwait for possible combat operations, units were directed/ordered (via OPORDs and FRAGOs) to deploy with all of their CDE. Numerous units failed to abide by the directions and deployed without their CDE. The Third Infantry Division (Mechanized) (3ID [M]) Marne Inspection Program (MIP) and the NBC defense courses taught at Fort Stewart informs personnel/units in charge of unit level NBC programs to order not only required items of issue but also a 5% overage on all items needed to sustain operations. The main items of concern were mask parts; filters, discs, valves, and head harnesses. CDE items should have been ordered while back in garrison. The end result was that many units experienced difficulties with CDE management and specifically mask maintenance due to missing end items or parts to replace non mission capable (NMC) items.

Recommendation: Commander involvement is critical. Increase the rigor of the MIP and ensure emphasis is placed on the fact that CDE requisitions are part of the logistics system and should not be treated as a separate system.

Issue: CDE storage and deployment support by the installation at Fort Benning.

Discussion: The Fort Benning installation staff did not support the issuing of individual protective equipment (IPE) during the deployment of individual soldiers (late deployers) in support of 3rd Brigade 3ID (M). Several attempts were made by the division staff to get the Fort Benning staff to order JSLIST and issue it to those late to deploy to 3rd BCT. The staff at Fort Benning would not order, store, or issue the JSLIST, which resulted in soldiers deploying into a combat environment with only one suit or no suit. In many cases 3ID (M) soldiers deploying from Fort Benning were issued the older battle dress overgarment (BDO).

Recommendation: The division G4 in conjunction with the division chemical section and Fort Stewart DOR should update the current support agreement between Fort Stewart (FORSCOM) and Fort Benning (TRADOC) in order preclude a recurrence of this problem in the future.

Issue: Lack of a standard Army decontaminant for thorough terrain decontamination operations.

Discussion: When the 3ID (M) deployed starting in Aril 02, all Army stocks of decontaminating saturation number 2 (DS2) were frozen by Soldier and Biological Chemical Command (SBCCOM). The SBCCOM memorandum freezing the DS2 stocks directed units to use alternate decontaminants, but did not give instructions on how the alternate decontaminants were to be mixed, stored, and/or applied. Until the 3ID (M) received its M100 Sorbent Decontamination System (SDS) decontamination kits in January 03, this issue was compounded by the lack of DS2 for immediate

decontamination operations. The division chemical section coordinated for the purchase of high test hypochlorite (HTH) both at home station and in country to fill the need for a decontaminant for both immediate and thorough decontamination operations.

Recommendation: Project manager (PM) for NBC defense should select a decontaminant and move forward. Until a selection is made, publish thorough interim guidance for the Army to use while we wait. This guidance, at a minimum, should cover which decontaminants to use for immediate and thorough decontamination operations, mixing instructions, storage instructions, and recommended applicator.

Issue: Shortages of MTOE NBC equipment in the theater of operation.

Discussion: Some units deployed from home station without MTOE NBC equipment. Despite numerous directives instructing units to deploy with all their MTOE NBC equipment, there were several units that failed to do so. Some of the critical items left behind were the M41 PATS, M22 automatic chemical agent alarm (ACADAs), M17 SANATORS, and Radiac meters. This directly impacted the division's ability to ensure all soldiers were properly sized and fitted for protective masks and served to decrease the division force protection level. On several occasions unit rear detachments had to forward MTOE equipment.

Recommendation: Commanders must enforce precombat inspections (PCIs), follow directives, check load plans, and allocate space for the transportation of all MTOE equipment.

Issue: Unorganized and forced equipment draw from the Army prepositioned sock (APS).

Discussion: Prior to deploying to the Kuwait, the company painstakingly scrubbed the ABS document to identify all available equipment for draw. Because two decontamination platoons were already deployed, we were careful to subtract their requirements and focus on the remaining company assets. We applied the same concept for the M58 Smoke Tracks, M93A1 Nuclear, Biological, and Chemical Reconnaissance System (NBCRS) and M12A1 Decontamination Apparatus because we shipped these pacing items from home station. Prior to departing Fort Stewart, we were briefed that we would be drawing from APS-5 and that the necessary equipment had been identified and was ready for it to be drawn. Unfortunately, what we were told would be available and what we actually drew were not the same. First, we drew our equipment from APS-3 (Arifjan) instead of APS-5. Although the change in equipment draw location was unexpected, the system for drawing the equipment created a significant and lingering problem for the company that lasted throughout reception, staging, onward movement, and integration (RSOI). Secondly, there was no division, brigade, or battalion representative at the site to assist with the unpredicted draw. After receiving an in-brief from the APS personnel, the company commander briefed them on the equipment that she already had in country or currently enroute. She was only allowed to verify serial numbers for prime movers and weapons. When she questioned the uncomfortable procedure, she was informed that she would be given 10 days to report shortages. An example of a major shortage is the tank and pump unit (TPU) used in the decontamination platoon. The APS did not have any tank and pump units on hand. One of three decontamination platoons were without TPUs for more than two weeks. Because the company was forced to draw two additional heavy expanded mobility tactical truck (HEMMT) fuelers, we devised a plan to use the two 2,500 gallon tankers to transport water and actually have more water readily available to the

decontamination platoon. Unfortunately, due to the shortage of JP-8 fuelers in the division, the company was forced to laterally transfer the fuelers to elements in the 3rd Brigade Combat Team. The company finally alleviated the shortage by bartering with other units to secure the TPUs.

Additionally, the company had to secure seven 20' military-owned demountable containers (MILVANS) to store excess draw equipment because they were not afforded the opportunity to turn the equipment in.

Recommendation: In this situation much of this could have been avoided if the deployment was treated as though we were going to the National Training Center. Prior to any rotation to NTC, personnel from NTC (specifically the draw yard) visit the upcoming unit and the unit movement officers. Here the two parties sit down in a pre-determined meeting and hash out the future draw grid for the NTC rotation. This system works very well, with little or no frustrations with respect to vehicles and equipment. I believe it would be appropriate for APS personnel to take the time to visit respective deploying units prior to the deploying unit leaving home station. This is how we do it in training and we should follow this example in wartime instead of forcing units to deal with additional pressures from their draw.

Issue: Lack of CDE for Department of the Army (DA) civilians and DA contractors.

Discussion: Up to 50 DA civilians and DA contractors deployed with 3ID (M) in support of combat operations. The contractors served both in Kuwait and traveled with the division to Baghdad. 3ID (M) was required to provide CDE for these support personnel. Equipment supplied included: protective masks, JSLIST suits, boots, gloves, decontamination kits, and medical chemical defense material. None of these requirements are accounted for on the applicable authorization documents, meaning divisional units had to provide CDE and supplies from stocks intended for use by soldiers. The shortage of protective masks in the division and theater was so acute the division was required to use all of its spare "float" masks to cover the civilian support personnel thereby leaving no extra masks in the division once combat operations began.

Recommendation: There is no authorization on the division MTOE to support this requirement, therefore, DA should direct that all DA civilians and civilian contractors process through the Continental United States Replacement Center (CRC) at Fort Benning no matter where home station is or for whatever reason they are deploying into theater. In addition, ensure that CRC has enough CDE to completely equip all civilians who process through.

Chapter 23

Nuclear, Biological, and Chemical (NBC)

Topic B - Force Modernization

Issue: Suggested JWARN upgrades/modifications.

Discussion: The JWARN system was an invaluable tool at the division level for both planning and execution. Through extensive use of JWARN, we identified the following recommended upgrades to software packages.

JWARN should be able to communicate with command and control personal computers (C²PC), Maneuver Control System-Light (MCS-L), and FBCB². This includes, the ability to automatically import unit locations, import overlays, and export nuclear, biological, and chemical warning and reporting system (NBCWRS) reports and plots. We were forced to manually input unit locations when we had both the blue tracker (FBCB²) and MCS-L available; however JWARN does communicate with either system. In addition, unit locations cannot be exported to other JWARN users, thereby necessitating each individual JWARN user to battle track the entire battlefield versus a higher headquarters feeding unit locations.

JWARN does not retain user drawn graphics. Once JWARN is shut down all user drawn graphics are lost. This has obvious short falls for planning and execution.

JWARN will not import graphics from MCS-L, FBCB² or C²PC. Coupled with the inability to retain user drawn graphics, this lack of capability severely limits the utility of JWARN as a planning and battle-tracking tool.

JWARN is tied to the mobile subscriber equipment (MSE) backbone. Since it has no tie to the mobile FBCB² backbone, JWARN loses its utility when units are on the move or not connected to MSE.

JWARN only allows one unit overlay at a time; while there may be several types of unit overlays that one needs to track. During operations in support of IRAQI FREEDOM, we tracked enemy spot reports, friendly unit locations, decontamination points, and potential sensitive sites on JWARN. Due to the limitation of a single unit overlay, all of these were required to be tracked on the same overlay. This made the overlay needlessly crowded and difficult to read.

The chemical downwind hazard modeling functions (VLSTRAC or DTRA software) were not fully integrated into the JWARN program. There is no way to create a modeled downwind plot overlay and place it on the operational map.

Recommendations: Accept that JWARN will not be of operational utility for units on the move or integrate JWARN into the FBCB² system or some other wireless backbone. In addition, make the following upgrades:

- Add an import/export/save overlays function.
- Add an import unit locations and export to other JWARN users function.
- Add a multiple unit overlays versus a single combined unit overlay capability.
- Add a function to save user drawn graphics and import/export from standard Army platforms.
- Complete the integration of modeling software.

Issue: FBCB² NBC tools were not easy to use nor were they intuitive.

Discussion: Chemical downwind message (CDM) data was difficult to load and read since it was not in the standard 3 line format (W,X,Y) IAW ATP-45. In addition, loading NBC Reports 1, 2, and 3 data was cumbersome. The division tactic, technique, and

procedure (TTP) was to use the free text message format and follow the GTA 3-6-8 format. This eliminated some of the data input problems, but also bypasses some of the automated features in the FBCB², such as automatic warnings for vehicles approaching a hazard area. Finally, all wind data in FBCB² is in knots versus the Army standard of miles per hour (mph).

Recommendation: Modify the FBCB² NBCWRS interface to make it more intuitively obvious and more closely mimicking the current GTA 3-6-8 card. Look at building a direct tie to FBCB² and/or C²PC. Also, increase the bandwidth of FBCB² to allow the transfer of larger files.

Issue: JSLIST protective suit was a significant upgrade from the BDO.

Discussion: The 3ID (M) Infantry's experience with the JSLIST was very positive. The lighter nature of the suit allowed the soldiers to operate in temperatures approaching 100 F with only minimal degradation. This is a significant improvement over the BDO. There were several issues associated with the JSLIST suit within the division.

The suit proved to be not as durable as the BDO under the strenuous conditions of the battlefield. Infantry soldiers easily tore many suits as they went about their day-to-day activities.

When soldiers were conducting fueling and maintenance operations the suit also appeared to absorb petroleum, oil, and lubricant (POL) products through to the inner lining more readily than the BDO.

Recommendation: Both of the above deficiencies were addressed by changes to division standing operating procedures (SOP). Units were directed to selectively downgrade mission oriented protection posture (MOPP) levels while conducting fuel or maintenance operations or wear wet weather gear over the suit.

Chapter 23

Nuclear, Biological, and Chemical (NBC)

Topic C - Maintenance

Issue: M93 and M93A1 FOX contract maintenance support was non-existent.

Discussion: We were unable to conduct maintenance operations on the FOX vehicles and systems in the division until after combat operations were over due to the inability to get the contract maintenance personnel forward. If combat operations had been extended, this would have been a serious issue, given that 2 of 12 M21s, 2 of 12 MM1s were not serviceable at the end of combat operations and numerous vehicles developed Class III oil leaks. Bottom line, General Dynamics maintenance did not provide any support until after units had been in Baghdad for over a week and after nearly all hostilities had ended.

Recommendation: Long term solution: Accelerate getting the capability offered by the FOX onto a common Army vehicle chassis. Short term solution: Modify the current FOX maintenance contract to allow the contract maintenance to go forward on the battlefield at least as far forward as the brigade support areas (BSAs).

Issue: Authorized stockage list (ASL) for FOX M93 and M93A1

Discussion: The CENTCOM area of responsibility (AOR) and Kuwait/Iraq theater of operations were logistically immature for the M93A1 NBC reconnaissance vehicle. One point not identified by NTC/JRTC/CMTC rotations is that mortar and high caliber munitions create easy mobility kills of the M93. Tires were a huge issue and, as in the case of 2/6/92, the unit was not sent with any spares. The depth of the battlespace created difficulties in pushing spares from the rear. Additionally, those spares, which should have been carried by the vehicles upon crossing the line of departure (LD), were pushed forward from Camp Udari. This was not the only "minor" maintenance challenge that presented itself. A problem arose when for each small matter the unit was forced to send the M93 back to 92nd Chemical Company or contractors.

Recommendation: Each M93A1 squad should have a mechanic organic to the element. This procedure would alleviate the need for 92nd Chemical Company to manage the maintenance slice while having little to no involvement with the supported units and many times being positioned well behind the supported unit in the division battlespace. Also, a prescribed load list (PLL) should be established not at the company or platoon level but at the squad level, accompanying the maintenance asset to the supported unit.

Chapter 23

Nuclear, Biological, and Chemical (NBC)

Topic D - Operations

Issue: Inability of the FOX system to monitor for toxic industrial chemicals and materials. (TICs/TIMs).

Discussion: There were several points during 3ID (M) combat operations where the ability to monitor for TIC/TIMs would have been very beneficial. For example: We detonated (using close air support [CAS]) enemy chemical tractor trailers that we suspected of containing possible phosgene or other industrial compound located generally upwind from the BCT assault positions. The decision was made to destroy the vehicles while the wind was low, atmospheric were unstable, and winds generally not towards the division. Weather forecasts had the wind shifting towards the division around end of evening nautical twilight (EENT). We were forced to mask the entire division as a precaution because we could not monitor definitively for phosgene or other industrial compounds.

Recommendation: Reintroduce the TIC/TIM chip in the FOX and consider upgrading the chip to increase the library of chemical compounds it can identify.

Issue: False alarms by the M22 were too common and diminished soldier's confidence in the system.

Discussion: The false positive rate for the M22 is too high. Multiple false alarms had the effect of diminishing soldier's confidence in the system. They were also potentially dangerous by forcing division forces into a higher level of MOPP than necessary when in contact or conducting C² of units in contact. In addition to the false positives we identified several logistics issues with the M22 listed below.

- Mounts in the offense. Given the continuous offensive nature of the fight dismounted, M22s were not useful.
- Battery shortages. There was a theater wide shortage of batteries causing many of the M22s in the division to go unused.
- The division is currently fielded at 10% of requirements for M22 mounts (requirement is approximately 7,000 systems).

Recommendations: The division should purchase the remaining mounts for all M22s in the division. The next generation pf chemical detector should be more reliable (less false positives, current system designed at a false positive rate of 3% or less). A solution could be a dual sampling and monitoring system. Each system could maintain the 3% rate, but both systems have to ring off to get an alarm. If one system rings off and the other does not, the system reflects a fault versus an alarm. The combined false positive rate would be less than .09%. Halving the number of systems authorized could mitigate the cost. The division came nowhere near using the 7,000 systems authorized.

Issue: Leaders not familiar with the characteristics of chemical agents in desert climates.

Discussion: Chemical agents dissipate rapidly in hot weather. Hot air convection currents carry agents upward and, therefore, minimize cloud travel and the threat of vapor hazards for ground troops.

Recommendation: Think of classic G-nerve agent persistency to be similar to that of water. It has little chemical similarity, but it does evaporate at about the same rate. Almost everyone can relate to how quickly water evaporates in most terrain and under climatic conditions. In very hot weather, like water, classic G-nerve agents last only minutes, but creates a significant, short- lived vapor hazard. G-agent effects are immediate. Think of mustard agents as being delayed-acting (effects often coming 6-12 hrs after exposure for H series) persistent chemical agents with the following rules of thumb. In the hot, daytime desert temperatures, mustard persistency will be about 6 hours or less if the mustard agent is exposed to the atmosphere (i.e., not buried). Depending on velocity, wind can reduce the persistency to around 2 hours. On the other hand, think of classic V-nerve agent persistency to be similar to that of motor oil (i.e., it hardly evaporates at all). It therefore is mainly a contact hazard with long persistency (its persistency is dependent on chemical reactions with the elements, not on evaporation.). V agents, like mustard agents, are delayed acting because they must soak through clothing and the skin to be effective. Once in the blood stream, however, they are extremely fast acting and symptoms, to include death, will occur in seconds to minutes. Entry through wounds and cuts will produce immediate effects.

Issue: Sensitive site exploitation (SSE) facilities.

Discussion: One of the reasons for the attack on Iraq was to expose key weapons of mass destruction (WMD) facilities. During the transition from combat operations to support and stability operations (SASO), we did not attempt to secure these key facilities before looting started. The looting in essence turned the facilities into crime scenes. The visible clues that may have provided a detailed analysis on WMD production, research and development (R&D), or storage were either destroyed or carried away by the local populace.

Recommendation: All future SSE facilities should be secured by ground combat or special forces soldiers. This would allow for a detailed exploitation instead of a crime scene investigation.

Chapter 23

Nuclear, Biological, and Chemical (NBC)

Topic E - Modification Table of Organization and Equipment (MTOE)

Issue: The division chemical section is not properly equipped to fulfill all of its missions as the nuclear, biological, chemical center (NBCC).

Discussion: The modern battlefield is a very fast, fluid, and non-linear battlefield. In order to maintain situation awareness and continuous communications in this type of environment, the division chemical section needs to have its own FBCB² and tactical satellite (TACSAT) communications.

Our most important function as the NBCC for the division is the establishment and maintenance of the NBC Warning and Reporting System. Our primary NBCWRS tool was JWARN. Redundant systems in place were digital non-secure voice terminal (DVNT), E-mail, tactical local area network (TACLAN), Iridium phones, SINCGARS and FBCB². While the major support commands (MSCs) were stationary all systems were effective; however, once the MSCs commenced their offensive operations and the distance between them and the division main command post (DMAIN) increased, most systems became ineffective. The JWARN, while a great tool for the NBCWRS and an NBC analysis tool, was of little value to units while on the move. For those units on the move, it became a stand alone system, not capable of forwarding messages. Units on the move quickly got out of FM/SINCGARS range. The only systems that were effective for communications were the FBCB² and the TACSAT communications. However, many units did not have FBCB² or TACSAT communications. While FBCB² was available in the DMAIN, primarily the G3 section uses it.

Recommendation: The MTOE for the 92nd Chemical Company needs to change. In order to enable the division chemical section to fulfill the critical role of NBCC, primarily responsible for the NBCWRS, it needs its own FBCB² and TACSAT communications.

Issue: Shortages of MTOE NBC equipment in the theater of operation

Discussion: Some units deployed from home station without MTOE NBC equipment.

Recommendation: Scrub MTOE for availability of prime movers to move all MTOE equipment. If need be, submit changes to the MTOE to facilitate the movement of all MTOE NBC equipment.

Issue: Division chemical lacks the equipment to run an effective NBCC and NBC element (NBCE) in the DMAIN and the DTAC.

Discussion: As a result of the chemical section being a part of 92nd Chemical Company and not a detachment in support of the division special staff, we are often left behind the other staff section in the area of new equipment in support of the division. This was noticeable during this deployment when other sections had all new tent age and

automated equipment. The automation equipment in division chemical, needs upgrading in order to effectively manage the NBC Warning and Reporting System across the division.

Recommendation: Turn division chemical into a chemical detachment, and allocate funds to upgrade on par with the division. Or allocate funds on a quarterly basis in order to function effectively.

Issue: Communication

Discussion: DMAIN NBCC was not capable of communicating on the move or once BCTs exceeded certain distances. The inability of the DMAIN NBCC to communicate causes a vacuum in situational awareness and destroys the NBC Warning and Reporting Network. During various instances, the NBCC was completely relying on Iridium phones provided by the staff weather officer (SWO) (and only at the halt) and TACSAT (only at the halt).

Recommendation: MTOE changes must be initiated to ensure the DMAIN NBCC is provided with up-to-date communication equipment.

Issue: M93A1 NBCRS support/authorization by MTOE

Discussion: Persistent chemical munitions are utilized in the same way that obstacles are, to shape the battlefield. The inherent mission of a division cavalry squadron is to provide reconnaissance and security for the division's assets. The M93A1 allows for greater situational awareness and allows for a contaminated area to be bypassed, breached (fixed site/terrain decontamination), or crossed at an appropriate MOPP level necessary to protect soldiers. The M93A1 squad attached to 3-7 CAV proved itself invaluable throughout the mission and in one instance provided detection capabilities near Karbala, where trace amounts of H-Series Blister were detected by two separate M22 ACADAs and the M21. The MM1 validated a negative M256 kit, which allowed us to avoid forcing the entire unit into an increased MOPP level, soldiers enduring the stress of MOPP4 over an extended period of time, and the loss of momentum during offensive operations.

Recommendation: The M93A1 should be an organic asset to a division cavalry squadron.

Chapter 24

Provost Marshal (PM)

Chapter Contents

Introduction/Lessons Learned

Topic A – Reception, Staging, Onward Movement, Integration (RSOI)

Topic B - Weapons

Topic C - Vehicles

Topic D - Communications

Topic E - Doctrine

Topic F - Training

Introduction

The 3rd Military Police Company and Provost Marshal Special Staff, comprised of 210 officers, noncommissioned officers (NCOs), and soldiers, expended a Herculean effort to support the Third Infantry Division (Mechanized) as it destroyed Iraqi forces in zone. Our job was made more difficult due to the fact that a corps military police company was not attached to the division. Each brigade combat team received one direct support platoon while the remaining general support platoons conducted enemy prisoner of war (EPW) operations. The division main command post (DMAIN) and division rear command post (DREAR) received one officer and one NCO while the remaining 18 personnel remained with the provost marshal in order to conduct the command and control of EPW operations. The provost marshal received the 30th Criminal Investigation Division (CID), judge advocate general (JAG), embedded media, forward surgical team, area medical support company, tactical human intelligence (HUMINT) team, linguists, and three 5-ton trucks (with drivers) as attachments at the initial attack position and detached after the establishment of TF BAGHDAD. The task organization was absolutely essential for the unit to accomplish its one specified task, conduct EPW operations.

The 3rd MP Company conducted reception, staging, onward movement, and integration (RSOI) escort missions for 20,000 personnel with an untold amount of Army prepositioned stock (APS) and home station equipment. The company crossed the line of departure (LD) along Lane 10, established the first of five division central collection points, crossed 350 miles of desert to establish the high value detainee facility in support of TF BAGHDAD, and re-deployed with all of its organic personnel. At the conclusion of hostilities, the unit had processed in excess of 2,091 enemy prisoners of war, civilian internees, and high value detainees.

The 3rd Military Police Company would best serve the division if it were restructured and resourced as a corps military police company. In addition, embed a long-range and stable communication system (HF or tactical satellite [TACSAT]) into each MP team in order to extend their area of operations while improving communication within the urban

canyons of a city. Also, embed an FBCB² on each platform to facilitate the command and control of MP operations across the future combat system asynchronous battlefield. The MK-19 failed to provide the effective rates of fire due to fouled ammunition; however, the —249 provided the necessary rates of fire to defeat or break enemy contact. The arming distance of MK-19 prevented its use during the close fight (Reference the fight at the escarpment by 1/3 MP Platoon). Dual weapon mounts (MK-19 and —249) are a lifesaver. In addition, the up armored M114 high mobility multipurpose wheeled vehicle (HMMWV), with gunner shield, once again proved that it does save lives and is a valuable combat multiplier.

Additional issues and corrective actions are provided so that future MP leaders can anticipate and/or mitigate the effects of these issues on combat operations.

Lessons Learned

- Training and tactics: NTC was a vital event and drove the success of the direct support (DS) MP platoons. The CTC experience proved to be invaluable.
 - Movement: During the course of combat operations numerous main supply routes were clogged with units trying to move north to support the fight. In some cases, convoys were halted for as far as the eye could see. A primary factor that contributed to the inefficiency of convoy operations was that serials were too large. In some cases units would move in serials that numbered in the hundreds of prime movers. It was discovered that serials of more manageable numbers, 40-50 vehicles maximum, assisted in the efficient forward movement of assets.
 - Small Arms: Magazines for the —4 and the —9 pistol were found to be of poor quality in a harsh desert environment. When compared to the magazines for the AK-47, they were not as well built nor as sturdy. Magazines left unattended and not cleaned daily were found to malfunction more often than well-maintained magazines.
 - Crew Served: The MK-19 failed to provide the effective rates of fire due to fouled ammunition; however, the —249 provided the necessary rates of fire to defeat or break enemy contact. Arming distance of MK-19 and slow traversing/elevation characteristics of the system placed the MP force at risk in a close fight (escarpment fight by 1st MP Platoon). Dual weapon mounts (MK-19 and —249) are a lifesaver.
 - Prime Mover: The light medium tactical vehicle (LMTV) was highly maneuverable. Older versions of the 2 ½ and 5-ton trucks easily got stuck in the sand. There was never a single incident of an LMTV getting stuck; in fact it was used to pull older trucks.
 - Team Vehicle: The M1114 saved several soldiers lives. The armor did its job, and the gun shields proved very effective against small arms fire.
 - Soldier Equipment: Soldiers found the load bearing vest (LBV) to be very uncomfortable and impractical when worn with body armor. Most soldiers did away with their LBV as soon as they could obtain ammo pouches for the body armor or other alternatives.
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Chapter 24

Provost Marshal

Topic A - Reception, Staging, Onward Movement, and Integration (RSOI)

Issue: Military police units were not front-loaded on the movement to Kuwait and had to support RSOI and build combat power simultaneously.

Discussion: The unit was not deployed until late January after many combat units were already in theater, which made it difficult for the unit to support staging and onward movement. The company had to immediately conduct RSOI escort missions within 24 hours of wheels down and still build combat power and inventory their own equipment. The unit supported RSOI right up to the tactical movement of the division to the assembly areas (AAs) and had very little time for training, last minute equipment checks, and getting property book items taken care of. Initially military police assets were scheduled to flow into theater as the next to last unit on the time-phased force and deployment (TPFD). This created an additional hardship on combat forces to provide their own force protection during convoy security operations. Third Infantry Division (Mechanized) (3ID [M]) quickly identified the need for additional MP support in theater, and MPs had to flow into theater on short notice, 20 days earlier than reflected on the TPFD.

Recommendation: Front load the 3rd MP Company in order to draw equipment first and to be able to support follow-on units with staging and onward movement. During all future deployments MPs should arrive in theater early in the deployment process to better support force protection and convoy security. This is absolutely essential in order to get combat forces forward as soon as possible.

Issue: The 3rd MP Company had four different APS draws from two different APS stocks.

Discussion: The unit arrived on at least seven different flights from September to January and did four different equipment draws from two different Army prepositioned stocks (APSs). At one time the unit had five different property books with two different hand receipt holders. This caused accountability issues not only with the unit but also the APS personnel who could not track what we actually had drawn. Also the APS 5 personnel could not find containers express (CONEXs) they wanted the unit to sign for. The unit had to personally search both Doha and Arifjan to find its equipment, then arrange its own transportation.

Recommendation: Consolidate the company as much as possible and front-load them to cut down on the number of separate draws the unit has to do. If the MPs are front-loaded, then they can also support RSOI instead of trying to draw equipment and support RSOI at the same time. If the unit were to deploy early and all platoons stay operational control (OPCON) to the company until onward movement is complete, it would better support the division and assist with property accountability.

Issue: Logistical problem during integration.

Discussion: The biggest problem encountered during integration was logistics and getting equipment and supplies to the unit. The unit could not get the required amount of tires for the vehicles and trailers to support the mission. Equipment was lost during movement because we could not get the required tires and rims needed to accomplish

the mission. The unit saw the need and tried to get the required equipment but never received the equipment due to equipment being back ordered. Other major logistical issues included the ability to get glint tape, thermal tape, combat identification panels (CIP), water cans, fuel cans, and small arms protective insert vest plates. Another major issue was the availability of LSAT for the MK-19. We tried to get LSAT prior leaving the states and when we arrived in Kuwait and could not get any. Many times we found that units had excess of things we needed, while others had nothing. As a separate unit under division troops, the military police did not get as much attention for equipment and supplies as the Brigades. When requesting assistance through G4 the first response was, "it was given out to the Brigades."

Recommendation: Make contingency operations (CONOPS) dollars available prior to deployment so they can deploy with the required equipment. Some items like tires and rims would require more money and relaxing the requirement under overage recoverable item list (ORIL).

Chapter 24

Provost Marshal

Topic B - Weapons

Issue: Inoperability of MK-19 ammunition.

Discussion: The MK-19 was prone to malfunctions in the desert because of the sand and issue of old ammunition. The weapons had to be kept dry so the sand would not stick to the weapon and cause a malfunction when firing. On several different occasions when MPs had contact, they had to resort to the M249 because either the ammo was bad or the contact was too close for the rounds to arm. The MK-19 is not sufficient to engage armor vehicles by itself and the potential for engaging massed dismounted troops at distances over 1,000 is minimal. The 50-caliber machine gun would provide sufficient firepower to engage and defeat the majority of threats military police typically encounter. Also, units deploying to NTC are issued 50 calibers instead of the MK-19 because there is no MILES for the MK-19. This is typically the first time units experience the 50 calibers. If they had them assigned, it would provide a smooth transition during this major training exercise. On most deployments, the base cluster commander typically does not want 40 mm high explosive dual purpose (HEDP) ammunition within the perimeter, so the majority of escorts conducted by military police are done with a M249, which does not provide the penetration power of a 7.62 mm or 50 caliber round. With the current weapons' mix, we are giving a false sense of security to the convoys we support.

Recommendation: Military police would be better served by a 50 caliber or M240B direct fire weapon. Most engagements military police encounter would be at close range and would be better served by these weapons systems. A two to one mix of 50 cal and MK-19 per squad, at a minimum, is recommended. Replace the M249 with the M240B.

Chapter 24

Provost Marshal

Topic C - Vehicles

Issue: Prime Movers

Discussion: The major equipment shortages, in relation to the heavy division MP company MTOE, are with the prime movers. The company had two fuelers and four 2½ ton trucks, the MTOE, however, only authorizes the company one medium tactical vehicle (MTV) and two LMTVs, which would not have been enough to accomplish the mission. The LMTV was very maneuverable. Older versions of the 2 ½ and 5-ton trucks easily got stuck in the sand. There was never a single incident of an LMTV getting stuck; in fact it was used to pull older trucks out.

Recommendation: The MTOE should add at least one fueler, a wrecker, and two LMTVs for a total of four prime movers to the MTOE. Another option to compensate for the fueler would be to have trailers to mount the fuel pods that already exist on the division MP company MTOE. The heavy division moves too fast and without these additions would not have been able to support the division. Support units were often too far behind to support.

Chapter 24

Provost Marshal

Topic D - Communications

Issue: Communications equipment. Due to the dispersed nature of military police assets on the battlefield the current SINCGARS radio configuration made it impossible for C² elements to track and direct their MP teams.

Discussion: The only communications equipment the unit had prior to deploying was SINCGARS and AM radios. With the distance between units on the battlefield reaching 60 km and more, the equipment was insufficient to maintain contact throughout the fight. Prior to crossing the LD, the battalion was issued two Iridium phones to fill this void. These were supposed to solve all communications problems, but proved less than reliable and it was not until seven days into the fight that they worked on a consistent basis. Eventually the unit was hand receipted a TACSAT radio to maintain communications and receive updates from the division staff. The company had no working PRC-129 radios, so talking within the perimeter was non-existent other than by field phones. When the company was separated as it came through the berm, it was capable of relaying messages by the Maneuver Control System (MCS) of the attached medical unit. For the first three days of the war the unit was in information blackout. We were the last unit through Lane 10 and had no form of communication with higher headquarters. During the course of combat operations, division military police teams were required to support the full spectrum of operations often over 50 kilometers from their C² element. Inefficient communication causes inadequate command and control and puts our soldiers and leaders at risk.

Recommendation: Reliable portable radios need to be fielded that offer secure communication. At a minimum, platoon leaders need to be fielded with Force XXI battle command brigade and below (FBCB²) so the commander can maintain situational awareness of his units and have contact with higher headquarters. Also, all vehicles, to include prime movers, need radios because they will be dispatched to drop off supplies or recover vehicles and need to maintain communications in the event they become disoriented. An additional radio set should be authorized by MTOE to allow for a base

station unit without having to take a radio in and out of vehicle each time the unit jumps. Increase the communications capability for all military police platforms. The Movement Tracking System (MTS) would be an excellent C² package that would easily adapt to the high mobility multipurpose wheeled vehicles (HMMWV). The Army Medical Specialist Corps (AMSC) companies from Fort Hood that traveled as part of our task force had these systems, and they were able, within seconds, to identify the location of their elements arrayed on the battlefield, as well as send email. MTS is an excellent capability that would instantly solve our long-range communication problems and is recommended for the company commander, first sergeant, platoon leaders, and platoon sergeants.

Issue: Lack of ability to monitor and communicate with higher headquarters (division main command post [DMAIN]/division tactical operation center [DTAC]/ division rear command post [DREAR]).

Discussion: This is another force modernization issue. By MTOE, we are not authorized a TACSAT nor are we authorized a small extension node (SEN) team for much needed digital nonsecure voice telephone (DNVT) and SIPRNET capability. During the fight, and after in stability and support operations (SASO), the division commander held a commander's update twice daily. Once again the only communication capability we had was FM (which at best is good up to 18 km). The division provost marshal (PM) cell was left out of the command information loop during critical events and had no capability to talk with key C² nodes, nor did the division have the capability to communicate with my command post. Most of our communication was through relay with whatever BCT was within range, a poor and inefficient way to do business.

Recommendation: TACSAT authorization and priority should be established based on mission for a SEN team for DNVT and SIPRNET connectivity.

Chapter 24 **Provost Marshal** **Topic E - Doctrine**

Issue: Corps MP company doctrinal slice

Discussion: In order to accomplish our mission set, in support of not only the division, but also TF BAGHDAD, we intentionally took additional personnel to C² the division central collection points (DCCP), the PM TAC, and the DMAIN and DREAR. These additional personnel provided personnel service support to the general officers (GOs) without having to task the division MP company with these missions. It was particularly important to not task the division company, in light of the fact that we did not at any time throughout the operation receive our doctrinal slice corps MP company from V Corps. We supported the full spectrum of division operations, kept up with the fight, and transitioned into Phase IV SASO with only three general support (GS) platoons and the extra manpower we brought to build up capability in the division PM cell.

Recommendation: MTOE should be modified across the division MP cells to support division operations. We could not have effectively accomplished the mission without the following capability in the absence of our doctrinal slice:

(1) PM – LTC

- (2) DPM - MAJ
- (3) DIV PM OPERATIONS NCO – SGM
- (4) DCCP NCOIC – MSG X 2
- (5) BATTLE CPT – CPT X 2
- (6) BATTLE NCOIC – SFC X 2
- (7) DESK SERGEANT – SSG X 2
- (8) MPI – SGT X 2
- (9) TAI – SGT X 2
- (10) ADMIN ASSISTANT – SPC X 2
- (11) PM DRIVER - SPC X 1
- (12) DMAIN/DREAR LNO – 1LT X 2
- (13) DMAIN/DREAR NCO – SSG X 2

Note: When running continuous operations from deployment, conflict operations (war), through SASO, it is absolutely essential that every position have two personnel to maintain battle rhythm and operations tempo (OPTEMPO).

Issue: In order to support the enemy prisoner of war (EPW) mission it was necessary to task-organize to ensure that we met the requirements of the Geneva Convention.

Discussion: In order to cope with all aspects of EPW operations, we formed an EPW task force composed of MPs, staff judge advocate (SJA), military intelligence (MI), linguist, AMSC, fire support team (FST), and embedded media. This expertise gave us the capability to immediately deal with all aspects of requirements as outlined in the Geneva Convention and to meet the division intelligence and commander's priority intelligence requirements (PIR). Many EPWs arrived at the DCCP wounded. Attached medical support allowed us to care for Level I, II, and III patients freeing up the forward support battalion (FSB) medical assets to treat friendly casualties. The linguist was an invaluable asset that provided an immediate capability to assist us in directing EPWs from initial reception, through processing, daily sustainment operations, and evacuation of EPWs to corps. Legal support was also a "must" to ensure that the laws of war and Geneva Convention articles were followed.

Recommendation: EPW operations require a joint effort to be a success. Based on the formation of this task force we were able to sustain our self throughout the operation with minimal support from outside organizations.

Adapting while fighting: Doctrine is a sound base line when it comes to EPW operations; however, based on the circumstances, environment, and limited resources, we had to make adjustments as to how the forward collection point (FCP) and DCCP were set up without sacrificing accountability, Geneva Convention privileges, or

security. Mission, enemy, terrain, troops, and time available (METT-T) drove the design of the FCP and DCCP regardless of location throughout the battlespace.

Issue: Transition from high intensity conflict to SASO.

Discussion: While the division was transitioning to SASO operations, the military police were still focused on EPWs that were trickling in from the BCTs. When corps relieved us at the DCCP and the unit moved forward to Baghdad International Airport (BIA), we quickly transitioned to SASO type operations. The unit's main focus during the transition was police intelligence gathering, security escorts, VIP escorts, and forward passage of lines (FPOL).

Recommendation: Have a plan for the transition, especially host nation police building. The sooner the host nation has its police force up and running the sooner the streets return to normal. Stop looting as fast as you can and have a plan to collect information. If you are receiving a lot of information at checkpoints or traffic control points (TCPs) get MI personnel and an interpreter involved and on the scene. We were physically unable to meet this recommendation to work with host nation police because we did not have our doctrinal slice of a corps MP company.

Chapter 24

Provost Marshal

Topic F - Training

Issue: Lack of training on convoy operations and jump TOC (military police support to convoy operations).

Discussion: Prior to the deployment the company had not been to the field with HQ, the three general support platoons, and the PM cell. The major problem was with movement and convoy operations. This problem was compounded by our task force makeup; a medical company, field surgical team, and military intelligence team were added to the convoy. The desert terrain also complicated things. During the RSOI process, it was extremely difficult to support convoys due to no notice departures, numerous changes to start point (SP) times, and lack of positive control by the division transportation officer (DTO). During the course of RSOI the provost marshal's office identified the need to move assets to Camp Doha to appropriately support convoy SP times and tracking. At one point this required three MP platoons and a C2 cell working 24/7 to support movement.

Recommendation: The division MP HQs, GS platoons and PM cell should deploy to the field as much as possible and practice jumping. After several convoys, we found it worked best to send all the vehicles that could move quickly to the make mission. The HQ's vehicles along with many of the medical vehicles would bring up the rear and move at a much slower pace. During all future deployments some MP presence should remain at Camp Doha until RSOI is complete.

Chapter 25 Army Airspace Command and Control (A²C²)

Chapter Contents

Introduction/Lessons Learned

Topic A - Deconfliction of the Division's Airspace

Topic B - Monitoring Use of the Division's Airspace

Introduction

During Operation IRAQI FREEDOM, a large numbers of airspace users needed access to the division's battlespace. Whether it was fixed-wing or rotary-wing aircraft, unmanned aerial vehicles (UAVs) or cruise missiles, artillery, rocket, or mortar fires, divisional or non-divisional assets, all had to work with the division to gain access to and engage the enemy. Considering the large number of users, this was a noteworthy task, but it did not start with the outbreak of hostilities. The division began managing its airspace as units arrived in Kuwait and conducted training in preparation for the attack. This train-up period proved instrumental in the division's success in deconflicting its airspace as numerous tactics, techniques, and procedures (TTPs) were practiced and internalized. The initial plan for implementing the Army airspace command and control (A²C²) measures was for the division main command post (DMAIN) A²C² cell to layout formal airspace control measures (ACMs) at least 48 hours in advance and the division tactical operations center (DTAC) A²C² cell to finalize the synchronization and deconfliction roughly 24 hours in advance by using informal ACMs.

The division's A²C² efforts were successful overall. There was only one moment where non-divisional aviation assets were in conflict within the division's airspace and may have led to a fratricide. The DTAC monitored the situation and performed last-minute deconfliction before fratricide occurred. Communications between different A²C² cells was difficult due to the speed the division moved and distance at which the division conducted operations. The 4th Brigade tactical operations (TACOPS) often made direct coordination with V Corps G3 Air and A²C² element to resolve airspace conflicts when the division A²C² element lacked communications.

Lessons Learned

During continuous offensive operations when communications are difficult, the G3 Air needs to deconflict the airspace in the DTAC where he can communicate directly with the division's airspace users

The implementation of key TTPs during the training and planning cycle are instrumental for successful A²C² during the actual fight

Monitoring the use of the division's airspace is essential for success and Air and Missile Defense Work Station (AMDWS) can assist with this effort when needed

Though a valuable tool, the Tactical Airspace Integration System (TAIS) still has a number of issues and must be re-engineered and re-tested in order to be completely successful

Chapter 25

Army Airspace Command and Control (A²C²)

Topic A - Deconfliction of the Division's Airspace

Issue: Army airspace command and control (A²C²) for the close fight

Discussion: Every type of element that could use the division's airspace did including: air interdiction (AI), close air support (CAS), Tomahawk Land-Attack Missile (TLAM), UAV, attack aviation in deep attack and close combat attack (CCA), Army Tactical Missile System (ATACMS), rockets, cannon artillery, and mortars. The technique we used to deconflict the airspace was a solid set of TTPs that were developed prior to crossing the line of departure, nightly A²C² meetings in the DTAC, and stringent execution of what we agreed upon.

TTPs that we developed included using a hard deck for CAS of 10,000 ft above ground level (AGL) and requiring the brigades to clear the airspace if they were to fire indirect above 10,000 ft AGL. We also standardized the ingress/egress routes for CAS that allowed for simultaneous execution of targets with CAS and artillery using ordnance (ORD) X. When attack aviation was used in a CCA role, it was controlled by the brigade fire support officer (FSO). This technique prevented aircraft from entering his zone without his knowledge while he was firing artillery or mortars. When one of the TTPs could not be deconflicted, one of the systems competing for the airspace was stopped until it was clear to reengage with that system.

One of the critical points we made was that BCTs own the airspace above their boundaries and that aircraft had to often travel across other BCT's airspace to get to their intended targets. Placing a huge restricted operations zone (ROZ), airspace coordination area (ACA), or other form of restrictive fire support coordination measures (FSCMs) over the division battlespace would only restrict fires and proved undesirable. We had to limit the amount of space the aircraft would take up. We also had to be careful of airspace coordination areas (ACAs) that uses an "easting" or "northing" gridline to restrict the firing of surface-to-surface fires. At times we could actually be shutting down another BCTs fires because of a huge informal ACA. By building routes and CAS stacks, we limited the airspace the aircraft used and still utilized all forms of surface-to-surface fires.

Nightly in the DTAC, we held a 5-10 minute meeting with the air defense officer, artillery officer, air liaison officer (ALO), aviation brigade liaison officer (LNO), and the TAIS noncommissioned officer (NCO). This meeting deconflicted assets that were to enter/exit the division's airspace during the next 24-48 hours. It brought all players together to synchronize the current and short-term battles and proved to be very effective.

Recommendation: Maintain the systems that we developed for deconflicting airspace. While each theater will direct different TTPs, develop, publish, and ruthlessly enforce

what has been agreed upon. Develop multiple ways to facilitate communications within the DTAC to allow all on the DTAC A²C² team to influence the division's airspace.

Issue: Airspace and position area hazard (PAH)/position area assessment (PAA) deconfliction

Discussion: Deconfliction of PAHs/PAA with V Corps artillery/division artillery (DIVARTY)/A²C²/fire support element (FSE) was a constant struggle at 4th Brigade tactical operations center (TACOPS) and FSE. Last minute changes, primarily by V Corps artillery, of PAH/PAA locations significantly affected all airspace and fire support coordination measures, leaving no time for proper analysis of impacts. While these changes were quickly adjusted and published out via Advanced Field Artillery Tactical Data System (AFATDS)/Automated Deep Operations Coordination System (ADOCS)/TAIS, it still increased the chance of "big sky, little bullet" theory being proven untrue. Additionally, the status of PAH/PAA (active or inactive or no longer used) needed to be published/radio call by Corps Artillery/DIVARTY, which would increase the flexibility of rotary wing (RW) and fixed wing (FW) operations. A standard PAH size would be a big step in the right direction, as it changed from 16 x 16, to 7 x 7, to 3 x 3. The division A²C² cell added no value to this process. They acted only in a middleman capacity with no analysis or knowledge of the impact they had on 4th Brigade operations. For example, 4th Brigade would receive a new PAH 3 hrs out from an operation, located directly under a route or ROZ. 4th Brigade would have to make inquiries of DIVARTY, Corps Artillery, and Corps A²C² to find out the ground truth.

Recommendation: Early planning and direct coordination should occur among DIVARTY, FSE, and A²C² elements to ensure airspace and PAH/PAA locations are deconflicted and support the scheme of maneuver and fires. Early identification of land and terrain suitable for FA units and the size of the PAH/PAA is critical so ACMs and FSCMs can be developed around those areas.

Chapter 25

Army Airspace Command and Control

Topic B - Monitoring Use of the Division's Airspace

Issue: Use of AMDWS to assist with monitoring the division's A²C² effort

Discussion: Since the TAIS system was never operational, the AMDWS with input from the division's SENTINELs and the tactical digital information link (TADIL)-J feed served as the only way the division leadership could monitor the use of airspace within our battlespace. The division leadership was able to monitor the passage of friendly aircraft through our airspace as well as track our own aviation brigade assets as they targeted the enemy within range of our radar systems.

Recommendation: In order to manage the division's airspace, there must be a system in place that provides a real-time picture of where air assets are located. The first choice would be a dedicated A²C² vehicle such as TAIS, but AMDWS can serve as a workable backup system if it does not compromise the SENTINELs primary mission of identifying the enemy air threat forward of the division's immediate battlespace.

Issue: The unavailability of a TADIL-A feed to support TAIS

Discussion: The TADIL-A feed for air track data from airborne platforms was impossible to receive due to three issues. First the communications security (COMSEC) for the KG-40 HF Crypto Device was not readily available in the division; it had to be obtained from the COMSEC custodian at combined forces land component command (CFLCC) HQ at Camp Doha. The second issue was the HF receiver antenna array and the problem of erecting it in a timely manner with only two personnel. The third issue was getting on the operation task link (OPTASKLINK) in order to receive the correct settings and frequencies required to program the air defense systems integrator (ADSI) computers.

Even after all these problems were resolved, there were additional issues the section didn't know about until the field engineers and Project Managers Office representative brought them up. The major one was the correct data terminal set (DTS) cable had to be installed in the TAIS. The next issue was the settings on the ADSI and 95-S had to be readjusted for proper reception.

Recommendation: The current TADIL-A process needs to be streamlined in order to facilitate rapid employment and ease of use. The satellite communication (SATCOM) radio should be used to monitor the fight instead of listening to the joint interface control officer (JICO) net for changes in HF frequencies. A simpler antenna that is attached to and can be erected from the shelter such as the Joint Tactical Information Distribution System (JTIDS) used by the AMDWS needs to be employed.

Issue: Failure of TAIS technical support to respond in a timely manner to equipment outages.

Discussion: Hardware and software engineers arrived in Kuwait prior to the initiation of hostilities and provided significant hardware/software support to the TAIS. Their on-site training of personnel with dealing with hardware/software issues previously not covered during new equipment training was crucial in preparing the air traffic service (ATS) LNO section for combat employment of the TAIS. The main issue with the engineering team was that it was over tasked trying to help all the other TAIS systems and could not react quickly enough when immediate problems arose. This was due to the distances between sites and their base of operations as well as difficulty in contacting them. The 3ID (M) TAIS shelter was assigned to the DTAC that controlled the close fight of the main effort. This shelter should have been given priority in maintenance and technical support due to the important role it played during the fight.

Many of the equipment/software problems encountered were easily corrected. An additional week of NET training in the Unix software language and operator trouble-shooting especially under unusual conditions would help immensely. Where the contractors are positioned is an important factor in their ability to respond in a timely manner. Other systems had enough contractors in theater, which allowed them to live and travel with the user unit the entire time.

Recommendation: Technical support for the TAIS system, from new equipment training to contractor support, must be re-looked.

Issue: TAIS did not work as advertised.

Discussion: TAIS is an airspace coordination system, supposedly capable of tracking aircraft over the Division's battlespace. Additionally, it allows for ACM input and

dissemination throughout the theater. The ACM process worked sufficiently, however, the air track system did not work for the duration of the campaign. Additionally, the system requires extensive maintenance and contractor support, which was not available during the campaign.

Recommendation: Either correct the system to provide flexibility and capability to operate in different networks or develop a system that provides the service required. A viable alternative is upgrade global command and control (GCCS) command and control personal computers (C²PC) to incorporate the air combat maneuvering range (ACMR) and fires processes, thereby eliminating unnecessary automatic data processing (ADP) systems.

Issue: Mobile subscriber equipment (MSE) phones and the SIPRNET were not always reliable, especially during movement.

Discussion: Tactical satellite (TACSAT) radios were the primary means of communications used to control the fight and relay information at the DTAC.

Recommendation: Assign a dedicated A²C² TACSAT frequency for immediate ACMR requests and secondary communications. Wireless SIPRNET connectivity might also be considered as an alternative.

Issue: Only one FM radio can be remoted to the vehicle cab during movement.

Discussion: The ability to maintain communications on the move was critical during the fight. Secure FM is the primary means of communications, however the distances traveled required long-range radios.

All the radios in the TAIS should be remoted to the cab for on the move communications and situational awareness. This would also require using a whip antenna for the HF radio since it is the only radio that doesn't have an antenna mounted on the shelter.

Recommendation: All the radios in the TAIS should be remoted to the cab for on the move communications and situational awareness.

Issue: TAIS electronic component failures and lack of durability in a desert environment degraded overall system performance.

Discussion: The following equipment failed or didn't perform to standard due to component failure or contamination from sand:

- Floppy drives inoperative
- Printer inoperative
- Access Net Tri-Tac (DNVT phone) card failed
- DSI cable not properly installed
- Light bulbs failed
- Floor safe would not open

- Door combination lock would not open
- 95-S antenna reliability
- Remote workstation

Recommendation: A better stock of replacement parts needs to be included in the current prescribed load list (PLL). Components that are not sealed need better filters and an air compressor should be included with the system for cleaning electronic circuit boards.

Chapter 26 Command and Control (C²)

Chapter Contents

Introduction/Lessons Learned

Topic A - Communications

Topic B - Equipment/Platforms

Introduction

At the division level, the number one lesson learned over the entire Operation IRAQI FREEDOM is that units from platoon to division level must be able to command and control on the move. Systems and equipment that could not execute on the move quickly became ineffective. Twice during OIF, the division moved over 350 km in less than 80 hours. These types of offensive operations required all units to plan, command, and control while moving towards the objective.

The Army must develop long-range communications and data systems that work on the move. Units from TF to division level desperately need C² vehicles, with updated technology and an on the move capability. Units should also work to ensure as much planning as possible is accomplished prior to line of departure (LD). This develops a common picture and focus that allows a more fluid command and control operation. This chapter will discuss communications systems, equipment, and planning that worked well or should be improved.

Lessons Learned

- On the move, long-range voice communications are a must for the mechanized brigade and division.
 - The Army requires a single, on the move, data system that meets the requirements of all battlefield operating systems (BOS).
 - Field a FM, frequency hopping, dismounted radio for dismounted squads and platoons to talk to each other and to M1s and M2s.
 - Divisions and BCTs must transition to more smaller, survivable, and mobile command posts.
 - Mobile C² vehicles such as the M4 (command and control vehicle ([C²V])), must be further developed to provide command posts (CPs) a reliable on the move C² capability.
-

Chapter 26 Command and Control (C²) Topic A - Communications

Observation Synopsis

FM communications from BCT to division level did not meet the requirement for the 3ID (M) during OIF. BCTs and divisions must have a communication system that does not rely on line-of-sight. Line-of-sight radios no longer provide adequate coverage for a mechanized brigade or division on the move.

Multidirectional tactical satellite (TACSAT) provided the best voice communications for units in the offense. Crucial to its success however, was a high look angle and a broadband frequency. The high look angle allowed vehicles on the move to mount the antenna oriented straight up. This allowed the antenna to receive a signal regardless of the direction of travel. The broadband frequency was critical, as the narrowband frequencies distorted the transmissions and required several calls to relay information. Modifying the antenna mounts and gaining a broadband frequency gave the division a long-range voice communication system. However, the single wideband frequency only allowed the division to effectively operate the command net over extended distances. The division fires and operations and intelligence (O&I) nets that operated on narrowband frequencies were ineffective. Additional wideband frequencies and antenna mounting systems that provide an on the move capability are required if TACSAT is the primary voice communication system for a mechanized division. BCTs and divisions must have multiple dedicated nets that provide clear and responsive voice communications over great distances.

Lack of an “on the move” capability also limited many of the division’s data systems. Force XXI battle command brigade and below (FBCB²) proved to be the only data system that truly operated on the move. Advanced Field Artillery Tactical Data System (AFATDS) had “on the move” capability, however, it was limited to the line-of sight requirements of the FM radio. Other systems, such as command and control personal computer (C²PC), Automated Deep Operations Coordination System (ADOCS), All Source Analysis System – Light (ASAS-L), Maneuver Control System – Light (MCS-L), Air and Missile Defense Work Station (AMDWS), and Joint Warning and Reporting System (JWARN) all required the mobile subscriber equipment (MSE) backbone to influence the fight. Due to the rapid advance of the attack the division main command post (DMAIN) and division rear command post (DREAR) both moved simultaneously during much of the operation, making MSE data communications impossible during their movement. This, coupled with the fact that many of the new digital systems do not have the capability to exchange data and are not integrated with each, other makes operations even more challenging. Maps, graphics, and icons are different on each of the electronic enablers, and this forces staffs to input the same data multiple times to gain a common picture.

Additional command and control issues arise at the lowest levels of the division. When infantry soldiers dismount from a Bradley Fighting Vehicle they have no ability to talk with mechanized sections within their team. Dismounts must be able to talk to combat vehicles to effectively integrate supporting fires. The current integrated communications security (ICOM) radios and the limited manpacks make it difficult to ensure constant communications. The AN/VRC 148 (v)(2) radio from THALES (NSN 5811-01-463-5543) would meet this requirement. This radio is the size of an AN/PRC 127, but has ability to be loaded with communications security (COMSEC), and can operate in the FH mode. It has the same capabilities as the manpack but is smaller and the accessories that come with it make it easy to operate during dismounted patrols.

Chapter 26

Command and Control

Topic B - Equipment / Platforms

Observation Synopsis

During OIF, the division maintained four command posts, the assault command post (ACP), DTAC, DMAIN, DREAR. The commanding general (CG) used the ACP to conduct battlefield circulation and gain a situational understanding to make crucial decisions. The DTAC was led by the Assistant Division Commander (Maneuver) (ADC [M]) and was the primary command and control element for the close fight. The DMAIN served as the key planning command post (CP) and maintainer of the MSE network. The DREAR, controlled by the Assistant Division Commander (Support) (ADC [S]) pushed all logistics. This structure worked fairly well, however, due to the long distances required to move, the DMAIN and DREAR were often on the move. This caused the MSE network to be very limited and proved difficult at times for the DMAIN to maintain situational awareness and influence the fight. During OIF, all BCTs established smaller more mobile command posts. This allowed the BCTs to maintain situational awareness of the close fight and command and control their units in a more responsive manner. Mechanized divisions and BCTs must continue to develop smaller and more mobile command posts. As communications become more advanced, the Army must move away from the large stationary TOCs and MSE based communications.

There is also a requirement for an improved command and control vehicle. Six months prior to crossing the LD, the 3ID (M) received three M4 command and control vehicles. These vehicles provided an incredible capability to command and control on the move for the division. They provide a very mobile and survivable C² platform. When outfitted with tactical satellite (TACSAT) radios, FM radios, and every data system the division owned, the M4 allowed the DTAC to control the division close fight. The M4's capabilities were limited by the systems that either required the FM communications or simply could not function on the move. When the DMAIN or DREAR were stationary and providing the MSE network, the M4s could come to a short halt and potentially have all systems fully operational within 30 minutes. However, over 90% of the command and control was conducted on the move using broadband TACSAT, FBCB², and AFTADS with units that were within FM range.

The M4s had great features such as the ability to talk wireless between tracks, an automatic FM mast antenna, climate control, and the ability to hold five operators comfortably. While the vehicle was a welcome addition to 3ID (M), there were several key issues that must be improved. The M4 must have fully functional systems on the move. Going to a short halt many times was simply not feasible to keep pace with the lead BCT. The FM mast antenna, climate control system, and wireless track-to-track communications failed at times. These features must be made more durable if the M4 is to be the C² vehicle for future mechanized divisions.

The ideal C² package for a DTAC is three M4s. This allows the maneuver, fires, and intelligence BOSs to operate and air liaison officers (ALOs), assistant division aviation officers (ADAOs), chemical officers (CHEMOs), and air defense officers (ADOs) to maintain situational awareness and contribute to the fight. BCTs can be effective with

only one M4, and TFs need a small more mobile version of the M4 to command and control their close fight. The future C² vehicle for TFs, BCTs and divisions must be mobile, survivable, and most importantly able to operate both long range voice and data systems on the move.

Chapter 27 Information Operations (IO)

The pre-war phase of information operations was primarily focused on the decision makers in the Iraqi Army. The use of e-mail to contact the generals urging them to surrender and contacting Iraqi governmental decision makers offering them deals to leave the country was a great idea in planning, but the U.S. failed to understand the Iraqi government was based on Stalinism and the fear of reprisals was greater than they had anticipated. Also, the use of psychological operations (PSYOPs) to drop leaflets was negated when the leaflets were collected and those who read them were punished.

During the actual prosecution of the war, the IO campaign took on a different tone. Physical destruction was a more effective method of controlling the enemy's IO campaign. The coalition egregiously underestimated Hussein's ability to use IO to his advantage. He demonstrated to the Iraqi people that he was in charge, and he would prevail no matter what the coalition could do. This was coupled with the fact that the Iraqi people were dubious of U.S. intentions. The 1991 debacle that encouraged an uprising and then abandoned the Kurds was foremost in the minds of the people. Hussein played upon this, convincing the people the U.S would only go as far as the oil fields and would never go as far as Baghdad. They had no reason not to believe him. The most effective way to counter this was to monitor the radio and TV stations that were playing anti-coalition messages and target them for physical destruction. Also, IO effectively used combat cameras (com-cams) to show that the coalition forces were not pillaging the country and were bringing humanitarian aide to the people in the southern part of the country. These images were broadcast on Commando Solo and SOMMS-B assets of PYSOPs. This could not be countered by the state run media and many citizens in Baghdad had locally made, black-market, satellite dishes, even though owning one of these meant six months in an Iraqi prison and a life-time of monitoring by Iraqi Intelligence.

Com-cam effectively showed the Iraqi people that the regime was lying to them by showing the minister of information stating that the U.S. troops were no where near Baghdad contrasted by footage of U.S. troops in the city. This helped destroy the regime's credibility. PSYOPs were used to deploy IO messages via loudspeakers in cities where coalition troops were moving, as well as to keep the lines of communications (LOCs) clear of civilians.

In the post-hostility phase of the operation, IO was used to inform the locals of the coalition's intent as to the Iraqi people. IO helped to keep peace by announcing curfew hours and instructions on how to surrender. IO was used to convey the message: "We're in charge. Saddam may have cut off the utilities, but we're here to help you help yourselves by working with you to restore normalcy." IO worked closely with civil affairs (CA) and PSYOPs. IO's greatest failures came from messages derived from Coalition Forces Land Component Command (CFLCC). They did nothing to help provide messages to give to the brigades in the form of talking points. They provided several statements by General Franks and messages to the Iraqi people telling them how they would be treated. After these were distributed, V Corps would call to say do not use it. This caused great confusion among the Iraqi people. By not providing messages in a timely manner and by being indecisive about the messages they wanted delivered, corps and higher missed a great opportunity to more rapidly bring an end to the war while still ensuring coalition victory.

Chapter 28 Civil Affairs (CA)

Chapter Contents

Introduction/Lessons Learned

Topic A - Planning

Topic B – Mobilization Table of Equipment and Organization (MTOE) Changes

Introduction

During Operation IRAQI FREEDOM, the 422nd Civil Affairs Battalion was the battalion supporting the Third Infantry Division (Mechanized) (3ID [M]). During the attack to Baghdad each maneuver battalion, each brigade headquarters, and each tactical operations center needed civil affairs (CA) support to conduct population resource control operations.

Lessons Learned

- Plan for the transition to stability and support operations (SASO) as part of the overall plan.
 - Staff the battalion with enough direct support teams (DSTs) to provide a DST to each maneuver battalion and each brigade headquarters, and a DST each for the division main command post (DMAIN), division rear command post (DREAR), and division tactical operations center (DTAC).
 - Equip the DSTs with sufficient armor and weapons to allow them to support their own movement.
-

Chapter 28 Civil Affairs (CA) Topic A - Planning

Issue: Planning for the transition to stability and support operations (SASO) and support of civil-military operations (CMO).

Discussion: As combat operations progress they will arrive to the point where the unit must transition to SASO. This transition must be carefully planned and targets identified and prioritized for protection.

Part of SASO is protecting infrastructure, historic sites, administrative buildings, cultural sites, financial institutions, judicial/legal sites, and religious sites. Protecting these sites must be planned for early in the planning process. All sites must be prioritized and protected based on the guidance from higher headquarters, relative impact on restoring services to the area of operations (AO), and relative importance to the nation/AO.

Without prioritizing, the unit will find itself protecting unimportant sites without enough forces to protect important sites.

The force occupying an area must plan for civil administration. Questions that must be answered include:

Will there be a curfew and what will the hours be?

Who will be the interim city leadership?

Who will provide fire and police protection?

Who has the lead for restoring utilities?

Who will coordinate relief priorities?

Who has the authority to hire/fire/appoint civil workers and leaders?

When will the civilian population be allowed to begin moving about the city?

Establishing a centralized information-clearing house is vital to restoring the city functions and keeping the civilian population informed. This clearinghouse may be the Civil-Military Operations Center (CMOC) or adjacent to it.

The civil information plan must get the commander's message out to the civilian population early and often. It must publicize the location of the information-clearing house, the hours for any curfew, anti-looting messages, actions to take when approaching U.S. checkpoints, guidance about expectations for civilian behavior, and the purpose for U.S. forces being in the area of operations (AO).

Recommendation: Plan for the transition to SASO as part of the overall plan.

Chapter 28

Civil Affairs (CA)

Topic B - MTOE

Issue: The MTOE for civil affairs battalions is not adequate for operations in a non-permissive or hostile environment or to support offensive operations.

Discussion: During Operation IRAQI FREEDOM, the 422nd Civil Affairs Battalion was the battalion supporting the Third Infantry Division (Mechanized) in its attack to Baghdad. The MTOE for the 422nd Civil Affairs Battalion organizes the battalion into a headquarters and headquarters detachment, a general support detachment, and a direct support detachment. The MTOE provides the battalion with M998 high mobility multipurpose wheeled vehicles (HMMWVs), SINCGARS radios, four M249 squad automatic weapons, and one water buffalo. The MTOE is deficient in the following areas, manning, weapons, vehicles, and communications.

During the attack to Baghdad each maneuver battalion, brigade headquarters, and tactical operations center needed CA support to conduct population resource control operations. This would have required 15 CAT-A teams. The 422nd could only provide

five direct support teams (DSTs) and task organized the GS detachment into six more teams. This was not adequate for supporting the division during the attack.

During the attack the teams supporting the brigades came under small arms and indirect fire numerous times. The protection afforded by the M998 HMMWVs was not adequate and the teams were forced, in some cases, to withdraw without completing their missions. The cargo and seating capacity of the two-seat, M998s was also inadequate. The DSTs had six personnel, seven with a translator. This required one or more team member to ride in the back of the cargo HMMWV during convoys and operations. This reduced the capacity for the team to carry required supplies and equipment. During the attack all units were required to carry a five-day supply of meals, ready to eat (MREs) and water. This amount of supply nearly filled one of two vehicles. The other vehicle was filled with rucksacks, a-bags, sandbags, a tent, and other team gear.

The CA battalion had only four crew-served weapons. All other weapons were either M16A2s or M9 pistols. This severely limited the ability of the teams to defend themselves and the ability of the battalion HHD to support the defense of the DMAIN or DREAR.

The battalion deployed with assigned SINCGARS radios. There were not enough radios for each team after the battalion was task organized. The radios did not have enough range to communicate as needed and were not always compatible with the supported unit. When the battalion was mobilized, it received new communications gear. The training on this equipment was not adequate, and the gear did not come with vehicle mounts or an adequate supplies of batteries.

The battalion has one water buffalo. It was not able to support battalion operations at the DMAIN and at the DREAR.

Recommendation: Staff the battalion with enough DSTs to provide a DST to each maneuver battalion and each brigade headquarters, and a DST each for the DMAIN, DREAR, DTAC. The battalion must also be staffed to provide staff augmentation to the staff of each unit the DSTs are supporting and maintain battalion staff functions.

For each DST, provide two M1114 up-armored HMMWVs and one cargo trailer. The vehicles must have radio mounts. The team should have one M249 squad automatic weapon (SAW) and one M203 grenade launcher per team. Each team also needs a crew tent. The battalion should have two M240 machineguns with tripods and vehicle mounts. For communications each team needs appropriate FM communications equipment to communicate with the tactical unit it is supporting. Each team also needs single channel tactical satellite (TACSAT) to communicate with division headquarters.

The battalion requires two water buffalos to support operations with bulk water.

Chapter 29

Marne Visitors Bureau (MVB)

Introduction

Prior to deployment the concept of a division level visitors bureau was established to handle any VIPs (grade O7 or above) that would enter the Third Infantry Division (Mechanized) (3ID [M]) space during forward operations. This was a new concept, as previous visitors bureaus were in the Joint Visitors Bureau (JVB) concept involving unit liaisons working at corps or theater level.

Lessons Learned

- Sustain the concept of an embedded division level MVB.
- Sustain the four person section for the MVB as laid out in the MVB standing operating procedures (SOP).
- Protocol/MVB personnel should be required by modification table of organization and equipment (MTOE) to carry the M4 carbine or 9mm pistols as a personal weapon.
- Protocol/MVB personnel should be afforded some personal security training in the rear or prior to deployment.
- The operational readiness float (ORF) issue needs to be reevaluated at Forces Command (FORSCOM) level to determine how the Commanding General of the Third Infantry Division (Mechanized) or any other division commander can utilize a fund that is important to his ability to properly represent the division.

Issue: Division level visitors bureau (Marne Visitors Bureau)

Discussion: Prior to deployment, the concept of a division level visitors bureau was established to handle any VIPs (grade O7 or above) that would enter 3ID (M) space during forward operations. This was a new concept, as previous visitors bureaus were in the Joint Visitors Bureau (JVB) concept involving unit liaisons working at corps or theater level.

Recommendation: Sustain the concept of an embedded division level MVB. The MVB can look after the interests of Third Infantry Division (Mechanized), while at the same time maintain close contact with the division command group in order to ensure VIPs are getting a proper look at the division. Another reason for sustainment is that, once notified, MVB personnel can exercise tighter control over a visit, thus gaining additional time to plan for a VIP while ensuring proper coordination with division assets for a successful visit. This is essential to maintain the positive image of 3ID (M).

Issue: MVB personnel requirements

Discussion: During deployment to Operation LUCKY WARRIOR, (in support of Operation ENDURING FREEDOM) and subsequent operations in Operation IRAQI FREEDOM, the issue of staffing became crucial. The MVB deployed with four personnel in conjunction with the four personnel from the Division Equal Opportunity (EO) Office. The MVB functions in a forward environment consisted mainly of supporting visitors to the division area and supporting the command group's rare protocol related

requirements. The number of personnel deployed to support MVB operations was adequate to support the necessary mission and was largely based on the model used in garrison at Fort Stewart.

Recommendation: Sustain the four person section for the MVB as laid out in the MVB SOP. This was adequate to support operations in the camp setting, but as operational requirements shifted during the commencement of hostilities, this was a small number of personnel to support during the fight when resources were strained.

Issue: Deployment to Kuwait on short notice with additional personnel.

Discussion: Having learned that deployment was between 10 days to two weeks away and, that in accordance with MTOE, our section was not assigned a single piece of equipment, it became a difficult task to coordinate for the use and purchase of required equipment. Moreover, the staff would be blended with the division equal opportunity officer and non commissioned officer.

Recommendation: Under such circumstances, daily meetings with all necessary personnel are essential. In order to utilize the right channels for acquisition of materials, those with authority to implement IMPACT card purchases should be present, as well as other essential leaders within the command group. In addition, a checklist should be developed immediately to identify the mission, its requirements, and essential equipment. This list should be updated at every daily meeting in order to ensure nothing is neglected. This was done by the newly created MVB team and was very instrumental in ensuring that much, but not all, of the equipment questions were addressed and solved.

Issue: Vehicles (tactical and non-tactical) and other essential equipment

Discussion: Upon receiving the mission to deploy forward to Kuwait with the division, the newly created MVB section, consisting mainly of protocol staff and EO staff, determined a need for vehicles in a tactical setting. The vehicles assigned to protocol in the garrison setting are a non-tactical 15 passenger van, a cargo van, and a sedan. Due to MTOE constraints, it became obvious we were going to be required to acquire vehicles we were not authorized to have, but realistically needed. The issue of tent space and other essential equipment also became a necessary requirement, but again, due to MTOE constraints, the staff would have to attempt to acquire equipment not organic to the section on short notice.

Recommendation: The MTOE should be adjusted to provide the protocol section and the division EO section with the equipment it needs to do its job. This would ensure access to the draw grid (for vehicles if necessary) and allow the commander to have the confidence that the division has the mobility and flexibility to freely maneuver all of its assets on the battlefield. Furthermore, field equipment such as tents, power distribution boxes, light sets, digital non-secure voice telephones (DNVT), office automation, and generator support ought to be provided in accordance with MTOE adjustments, if these sections are required to deploy and sustain themselves in a forward environment.

Issue: Section responsibilities in a forward environment

Discussion: Upon learning of the section composition and its mission, a concerted effort was made by the MVB staff to organize responsibilities and duties in order to successfully execute the MVB mission. The plan, largely, if not entirely, centered on the

Division Protocol Office model and would be used as the basis for establishing guidelines for the section's mission. Having never been to the field with the division tactical operations center (DTAC[+]) or division main command post (DMAIN), it was difficult at first to determine where the section would set up operations and how it would gain the support of various agencies in order to become operational. This was a unique task because protocol (or a MVB) had never been a concept the division included in its plans.

Recommendation: In the future, the Division Protocol Office should be able to, on occasion, deploy with the DMAIN during Warfighter exercises so the protocol/MVB concept is integrated into the division scheme. An added benefit would be the ability of soldiers to gain field experience in utilizing tactical equipment granted by the MTOE changes.

Issue: Personal weapon MTOE change

Discussion: After arriving in Kuwait, the MVB section found itself routinely escorting VIPs throughout high threat environments. This included picking up VIPs at Kuwait City International Airport among throngs of civilians and in vulnerable locations. During convoy operations for VIP escort missions, escort personnel were required to carry personal weapons inside the vehicles in the VIP convoy. Moreover, in accordance with policy, personnel were required to maintain a locked, but not loaded status in the event of hostile fire. The personal weapon assigned to MVB personnel was the M-16A2, which is wholly unsuited for operation in a confined space such as a moving vehicle due to its size and length.

Recommendation: Protocol/MVB personnel should be required, by MTOE, to carry the M4 carbine or 9mm pistol as a personal weapon. The M4 carbine is similar to the M-16A2 in volume and rate of fire, but has a more compact size allowing for easier operation by VIP escorts under confined conditions. This recommendation is vital for ensuring the effective security of VIPs.

Issue: VIP security training

Discussion: Escorting VIPs is one of the job requirements of protocol/MVB personnel. As such, staff members constantly accompany VIPs or precede their arrival. On occasions where personal security details (PSDs) are required, close liaison between PSD and protocol/MVB personnel is essential. Not all VIPs, however, bring PSD. The Under Secretary of the Army is one such case in point. Although a PSD did not accompany the Undersecretary on visits to Fort Stewart or Kuwait, there were occasions, particularly in the high threat Kuwait environment, where security awareness was essential. Trained personnel are not always available, nor are they always available in sufficient numbers. This presents a vulnerability that ought not to exist.

Recommendation: Protocol/MVB personnel should be afforded some personal security training in the rear or prior to deployment. This would not replace existing PSD trained personnel, but would give escorts and protocol personnel a higher state of visibility on potential threats and ways to react to those threats as a benefit to the safety of the VIP. In those instances where PSD staff is not authorized or present, this type of training would offer some level of protection for VIPs. Attendance at this type of training could be for all staff members or simply those that have more escort related responsibilities, such as officers and senior NCOs. This would make the protocol/MVB section a value

added resource to the command group because of its ability to conduct VIPs safely around 3ID (M) areas of operation, in the rear, and in hostile environments.

Issue: Commanding general's (CG) official representation fund

Discussion: The official representation fund is authorized by Forces Command (FORSCOM) for the CG to use when acting in ceremonial capacities. The fund is rigidly governed in accordance with AR 37-47, and all expenditures are subject to legal review. Upon deploying to Kuwait, it was determined that the fund site might need to be utilized at some point during the deployment. The ORF custodian attempted to determine how the fund could be expended in a forward environment if necessary. In doing so, advice was sought from SJA who, in turn, referred the custodian to FORSCOM due to the ambiguous language in the annual fund authorization memorandum for FY 03, which authorizes the annual expenditure of funds. Because FORSCOM has authority to issue the authorization memorandum, they had the final judgment call on the issue. They were not sure how the commanding general could spend the money overseas and after some deliberation concluded that the fund resided with the installation commander back at Fort Stewart and not with the actual commanding general. In order to secure funds, a laborious process was initiated to determine what command in the theater could issue an "ORF" fund for the CG to utilize. This process is still on-going because it is a subject that has never been broached. In addition, the process for utilizing any monies provided by a higher command appears to be so cumbersome and slow as to be ineffective in times where speed of action may be necessary.

Recommendation: The ORF issue needs to be reevaluated at the FORSCOM level to determine how the Commanding General of the Third Infantry Division (Mechanized) or any other division commander can utilize a fund that is important to his ability to properly represent the division. Moreover, any solution should include an expedient method of conducting authorized transactions, such as a credit card as opposed to the current time consuming process of mailing the vendor a check weeks after services have been rendered. This process is not conducive to supporting the CG in an environment where time may be a consideration. Moreover, ORF should establish a supplemental wartime fund for such emergencies that the commanding general can take wherever he may be deployed. Oversight to ensure compliance with the regulations could still reside with staff judge advocate (SJA) and after a legal review of intended expenditures is provided, the custodian can act on the CG's behalf.

Chapter 30 Inspector General (IG)

Introduction

The inspector general performs an important function of providing “eyes and ears” for the commanding general and continues to execute the IG missions of assistance, inspections, investigations, teaching, and training in a wartime environment. Although the mission of the IG does not change from peacetime to wartime, the execution of certain aspects of IG activities can be a rapid departure from what is normally conducted at home station.

Lessons Learned

- The inspector general must deploy with a solid and coherent system to facilitate cross-talk and operations between the home station inspector general and the deployed inspector general that can overcome significant communications difficulties.
- The inspector general must conduct a thorough military decision-making process (MDMP) concurrent with the operational plan that allows IGs to determine possible shortcomings and issues that can be resolved prior to the commencement of hostilities.
- The inspector general must have sufficient connectivity to more effectively disseminate assessments and other pertinent information to subordinate commanders.
- To execute the mission of being the eyes and ears of the commander, the IG must use whatever transportation assets are available to visit units and make observations, and must conduct prior coordination with convoy commanders to most effectively use these assets.

Issue: Coordination with home station IG to work IG cases.

Discussion: The majority of cases that the deployed IG conducts with home station IGs are nonsupport cases (soldiers in violation of AR 608-99, Family Support). Peacetime coordination with units is very well defined and easily conducted. With the IG team conducting split-based operations between Fort Stewart and Iraq, we noted several discrepancies on how we were passing cases to forward deployed commanders; the type of information or lack of information that was passed; and the lack of a tactics, techniques, and procedures (TTP) for case identification (a case numbering system).

Recommendation: Establish an internal IG office standing operating procedure (SOP) for split-based operations for home station and deployed IGs. Additionally, conduct pre-deployment briefings or discussions with brigade and battalion commanders on the procedures that will be used to handle nonsupport cases.

Issue: The IG team did not conduct a deliberate MDMP concurrent with operational plans.

Discussion: Once in theater, the IG team should have conducted an MDMP to identify possible shortcomings, issues, and coordination that the deploying IG team would have to conduct prior to the beginning of hostilities. By conducting an MDMP, we could have

better refined lift requirements, connectivity issues, and other problems and could have conducted better coordination to mitigate/minimize these issues prior to line of departure (LD).

Recommendation: Ensure that the IG team conducts an MDMP with a focus on logistics and communications issues and coordinate issues prior to LD.

Issue: The IG team did not have sufficient connectivity to more effectively disseminate assessments and other information pertinent to commanders.

Discussion: The IG team conducted various assessments prior to and after the division's movement north into Iraq. These assessments included: Soldier Basic Knowledge, which assessed soldier skills on a variety of critical tasks; Force XXI battle command brigade and below – Blue Force Tracker (FBCB2-BFT), which assessed user-level competence and system operability issues; force protection, which assessed guard force knowledge and procedures while the division was in the camps and assembly areas; and other assessments. At the time of the dissemination of each assessment, the IG team did not have SIPRNET connectivity, but rather relied on the G1 or the division rear command post (DREAR) staff judge advocates (SJAs) SIPRNET connectivity to disseminate the information. While effective, it did not facilitate cross-talk between users of the information and the IG for clarification or answering questions.

Recommendation: Ensure that the IG team has a computer accredited for SIPRNET access in order to maximize dissemination of information of value to commanders, as well as allow cross-talk via email to recipients of the information.

Issue: Use of logistic convoys to visit units and make observations.

Discussion: Because the IG team had only one high mobility multipurpose wheeled vehicle (HMMWV), it had to rely on logistics convoys traveling to and from brigade combat team locations. This was an effective means of moving on the battlefield because it provided the IG an excellent opportunity to see, in detail, various aspects of the division's system of resupplying units. Additionally, the duration of these round trips between the division main command post (DMAIN) or DREAR (usually 2 days) allowed the IG an opportunity to talk to senior leaders, as well as junior soldiers to identify concerns and perceptions.

Recommendation: To maximize this transportation asset, ensure the IG coordinates with the commander of logistic units (usually the forward support battalions) to identify link up points and when convoy briefings will occur

Chapter 31 Staff Judge Advocate (SJA)

Chapter Contents

Introduction

Topic A - Predeployment

Topic B – Reception, Staging, Onward Movement, Integration (RSOI)

Topic C - Hostilities

Topic D - Stability and Support Operations (SASO)

Introduction

The deployment to Kuwait and subsequent combat operations in Iraq were historic activities for the Third Infantry Division (Mechanized) (3ID [M]). Key SJA lessons learned included the validation of pre-deployment soldier readiness centers (SRCs); thorough rules of engagement (ROE) training for soldiers; and the usefulness of ROE cards. As a result of our efforts, most soldiers were “good to go” on legal at SRCs and 100% of the soldiers understood rules for use of force in Kuwait and as we transitioned to war. Another success was the preparation of individual SJA officers and soldiers for their wartime mission.

However, several things need improvement. The most critical SJA lesson learned is the need to update the division modification table of organization and equipment (MTOE) to provide more support for the Office of the Staff Judge Advocate (OSJA). The division MTOE presupposes that 19 officers and 23 enlisted can operate in three different locations (the division tactical operations center [DTAC], division main command post [DMAIN], and division rear command post [DREAR]) in three vehicles currently on the MTOE. Perhaps Force Modernization personnel assumed that SJA personnel and associated equipment would be transported by other staff sections in the DMAIN or DREAR. This assumption is untrue, and a modification to increase the number of vehicles and other equipment dedicated to the SJA should be forwarded to Department of the Army (DA).

Another significant issue involved processing of captured prisoners. Soldiers failed to properly record the circumstances of many captures. Later, we were unable to identify enemy soldiers who violated the law of war (LOW), and, therefore, cannot achieve a major goal set forth by President Bush: To punish those who violate the law of war. There was no separate detained civilian camp.

Many of the issues identified in the SASO portion of this Chapter resulted from the lack of a plan for Phase IV operations. 3ID (M) transitioned into Phase IV SASO with no plan from higher headquarters. There was no guidance for restoring order in Baghdad, creating an interim government, hiring government and essential services employees, and ensuring the judicial system was operational. In retrospect, perhaps division planners should have been instructed to identify and address these issues earlier, given the likelihood that higher would not provide such information.

Chapter 31
Staff Judge Advocate (SJA)
Topic A - Predeployment

Issue: Pre-deployment SRCs.

Discussion: All division soldiers were afforded opportunities to SRC (the service was available daily for weeks prior to deployment, as well as at regularly scheduled unit SRCs). Attorneys and support staff regularly attended Family Readiness Group (FRG) meetings to further meet the pre-deployment legal needs of division soldiers. In many cases, soldiers simply bypassed the legal station at the SRC and said, "I have a will and power of attorney." When deployment for war was imminent, the number of soldiers needing last minute wills was beyond the capability of the OSJA, even with the call-up of three reserve attorneys. Up to a two-week wait developed for wills, although by prioritizing, the OSJA ensured that every soldier had a will (other customers were inconvenienced).

Recommendation: Sustain use of SRCs to ensure soldiers are prepared for deployment. Sustain level of training to individual soldiers and units. Improve utilization by stressing the importance of these documents prior to deployment and make soldiers understand that getting a will at the last minute may be difficult.

Issue: Pre-deployment training.

Discussion: The operational law attorney and noncommissioned officer in charge (NCOIC) briefed 100% of deploying soldiers and units on LOW, code of conduct, and ROE prior to deployment. Pocket ROE cards were provided to each soldier. Trial Counsel reinforced and/or taught the same subjects prior to deployment and during RSOI.

Recommendation: Sustain use of SRCs to ensure soldiers are prepared for deployment. Sustain level of training to individual soldiers and units.

Issue: Pre-deployment SJA officer and NCO training.

Discussion: The OSJA developed a thorough training plan to prepare officers and soldiers for this deployment. Weekly classroom and hands on training covered virtually every individual soldier skill and some collective tasks. Additionally, we focused on ensuring SJA personnel were cross-trained in disciplines that they would encounter, especially international law and operational law. As a result of this training plan, SJA soldiers and officers performed their duty with great skill. They significantly contributed to the mission at many levels.

Recommendation: Sustain.

Issue: Integration of 3rd Brigade, 3ID (M), Fort Benning, into 3ID (M), Fort Stewart.

Discussion: The 3rd Brigade, 3ID (M), Fort Benning SJA team is affiliated with the Fort Benning, GA, OSJA. Fort Benning's OSJA (Training and Doctrine Command [TRADOC]) controlled staffing of the brigade combat team (BCT) legal team. Most of

the SJA personnel attended training with the BCT. Fort Benning and Personnel Command (PERSCOM) assigned personnel to the battalions, resulting in a very inexperienced deploying legal team. MTOE at Ft Benning was allowed to change, erroneously downgrading two infantry battalions from E5 to E4 positions. This separate (thus, unique) BCT needs to be staffed with experienced 27Ds and not soldiers fresh from Advanced Individual Training (AIT). The NCOIC position needs to be a motivated, experienced NCO. Automation requirements were not taken care of by Fort Benning (TRADOC) or the Fort Stewart (Force Command [FORSCOM]) offices.

Recommendation: The 3ID (M) SJA and chief legal noncommissioned officer (CLNCO) must make temporary duty (TDY) trips to Fort Benning to ensure integration of the legal team into Fort Stewart's OSJA. Training should mirror the 3ID (M) training schedule. The 3ID (M) chief paralegal noncommissioned officer (CPLNCO) should handle all assignments to 3rd Brigade. Inspection by the Fort Stewart OSJA on a quarterly basis is needed.

Issue: MTOE inadequate to support brigade SJA assets.

Discussion: MTOE equipment dedicated for SJA use is insufficient to support the legal mission conducted by brigade operational law teams (BOLTS) and the DMAIN and DREAR elements. The BOLT, the DMAIN, and DREAR SJA sections have separate missions and responsibilities. Each is expected to perform those missions in a timely manner, simultaneously, across the division area of operations (AO). Current doctrine provides that the BOLT receives support from the brigade. During this deployment and operation, the BOLTS requested a high mobility multipurpose wheeled vehicle (HMMWV), a radio, supplies, a Global Positioning System (GPS) device, and other support from the brigades to which they were attached. In many cases the brigades' responded that they could not support the BOLT and instructed BOLTS to request support from the division SJA office. The division SJA office is not provided sufficient assets to meet its own mission and cannot provide such support to the brigades. Had we not deployed to Kuwait where prepositioned vehicles were available, the BOLTS would not have received vehicles. The minimum equipment the BOLT needs includes a vehicle, night vision goggles (NVGs), a field phone, and a GPS device. Ideally, there would be two radios: one for the fires net and one for the brigade command net. Additionally, access to a satellite phone and the Internet by computer are vital. During this deployment, OSJA members at all levels had to beg and borrow to obtain room in vehicles to travel to perform their mission. Communications during movement was almost impossible, hampering safety and mission accomplishment. If the operational law attorney in a convoy has no communications, he cannot provide essential services such as reviewing and providing LOW input for targeting.

Recommendation: Revise brigade MTOEs to provide at least one tactical vehicle with radio, one GPS device, and one digital non-secure voice telephone (DNVT). Amend FM 27-100 to reflect these requirements. The brigade lawyer cannot be expected to borrow or share this equipment.

Issue: Packing lists and equipment.

Discussion: The accuracy of packing lists provided by units complicated deployment preparations. Many items contained on the list served little or no purpose (e.g., black combat boots, cold weather bear suits, and training MOPP suits). Moreover, the command did not provide many items that would have facilitated deployment, including

large rucksacks, joint service lightweight integrated suit technology (JSLIST) carrying cases, second set JSLISTs, and desert camouflage uniform (DCU) Gore-Tex jackets.

Recommendation: Generate a refined packing list prior to deployment and secure sufficient items to equip soldiers.

Issue: MTOE inadequate to support DMAIN and DREAR SJA.

Discussion: The present MTOE for the SJA Office only authorizes three HMMWVs. During Operation ENDURING/IRAQI FREEDOM, the SJA office (DMAIN and DREAR) required five HMMWVs and two 2 ½ ton vehicles to accomplish the mission. We obtained these solely because we deployed to theater with prepositioned vehicles. Also the division MTOE provides the OSJA one crew tent and three HEX tents. These are inadequate for our needs. Ensuring that proper equipment exists for the SJA office would enable trial defense service (TDS) and/or legal assistance attorneys to provide more efficient service at the brigade level rather than moving soldiers to a TDS located in the DREAR for counseling.

The division MTOE recognizes that 42 soldiers (19 officers and 23 enlisted) will deploy with the DMAIN and DREAR. The assumption behind the current MTOE is that these SJA personnel with associated equipment will be transported by three vehicles on the MTOE or by other sections in the DMAIN or DREAR. The assumption that other sections have sufficient assets to transport our personnel and equipment is untrue.

Recommendation: Increase the HHC, division MTOE to reflect that SJA has five crew tents and five HEX tents. Increase the HHC MTOE to reflect that SJA has five HMMWVs and two 2-½ ton vehicles.

Issue: No GPS devices issued to soldiers.

Discussion: On more than one occasion during this deployment and war, soldiers became lost. Once, in a sandstorm while in enemy territory, a soldier was lost for over 12 hours and nearly captured. In the most famous example, a unit missed a route turn and encountered enemy forces, resulting in significant casualties, deaths, and American POWs (which provided a significant propaganda coup and morale boost for the enemy). That tragedy might have been avoided if every soldier in that convoy had been issued and trained on the use of a GPS device (or had every tank commander (TC) had access to a GPS device). Many soldiers purchased commercial GPS devices because the Army failed to provide GPS devices. A cost benefit analysis supports this recommendation. A good GPS device sells for approximately \$100.00-\$150.00, an insignificant cost.

Recommendation: The Army should purchase GPS devices as unit property and issue a GPS device to every soldier.

Issue: Attached personnel.

Discussion: Due to the unified table of distribution (TDA) and MTOE offices, OSJA personnel at Fort Stewart Hunter Air Force Base were assigned to both MTOE positions and TDA positions and worked side by side. Some personnel on the TDA were directed to deploy with the division to replace non-deployable MTOE personnel. Attachments took too long, causing difficulty getting military issue with units.

Recommendation: TDA personnel need to be identified early and assigned to HHC, division as soon as possible to ease the issuing of necessary equipment and accountability for future support needs. In addition, once attached, these personnel should be treated exactly the same as assigned personnel.

Issue: SJA staffing of DTAC and other headquarters HQs.

Discussion: The SJA and one enlisted soldier served in the DTAC. The DMAIN was staffed with the operational law attorney, chief of military justice, operational law NCOIC and one enlisted soldier. The DREAR was staffed with the deputy staff judge advocate (DSJA), officer in charge (OIC), legal assistance and claims attorney, TDS attorney, legal administrator, chief paralegal NCO, NCOIC, and eight enlisted personnel. Each BCT was staffed with a brigade operational law team (BOLT) consisting of one attorney and three or four enlisted personnel. One attorney worked with the 3ID (M) military police (MPs) at the enemy prisoner of war (EPW) detention facility.

Recommendation: Although 3ID (M) OSJA field standing operating procedures (FSOP) does not provide for a judge advocate general (JAG) at the DTAC, this is essential, given the nature of modern combat. While the SJA normally remains at the DMAIN, like other principals and commanders, he must be where he can best advise the command. In this battle, it was important for the SJA to be in the DTAC, which controlled the battle, to personally advise the Assistant Division Commander (Maneuver) ADC (M) and commanding general (CG). The DTAC should include two attorneys, however, to ensure 24-hour operations.

Chapter 31

Staff Judge Advocate (SJA)

Topic B - RSOI

Issue: Critical equipment and life support.

Discussion: HHC, 3ID (M) failed to account for judge advocate (JA) personnel when preparing load plans. Due to a communications issue, HHC did not initially include SJA personnel in their life support plan, allocation of radios, allocation of Precision Lightweight Global Positioning System Receivers (PLGRs), and other equipment despite our attendance at meetings and requests for support.

Recommendation: HHC must include OSJA in all facets of planning to include life support and equipment.

Issue: Communications.

Discussion: Prior to offensive operations, the DMAIN communicated with the DREAR and the BOLTs via SIPR, NIPR, DNVT, and personal visits. The DNVT system was surprisingly down or of such poor quality, it was useless. BOLTs shared lines in the TOC and spent hours trying to place or receive calls. This made communication impossible at times when we needed to discuss or resolve significant legal issues or pass important legal information and advice to subordinates or superiors. Whenever any OSJA component was moving as part of their headquarters convoy, they typically had no communication. During hostilities, the DMAIN could not communicate with the

DTAC, DREAR, or BOLTS through e-mail, DNVF, or FM for over five days. When the DMAIN was stable and the BOLTS were moving, we had the same problem. The SJA had a FM radio in his vehicle when he traveled with the DTAC, and alternatively monitored the convoy and command nets. Consequently, he and a brigade JAG traveling with the brigade fires officer were the only JAGs who could immediately advise commanders while units were on the move.

Recommendation: Ensure redundant means of communication between the DMAIN, DREAR, and the BOLTS. Ensure each BOLT has communications in their vehicle. Only reliable radio communications will allow us to properly function and accomplish our mission. An Iridium satellite phone is required for OSJA use.

Issue: Space utilization.

Discussion: Space is limited in the DMAIN and DREAR TOCs. At the DREAR, the SJA space was a small table in the corner of the G1/SJA/G5 van. At times, we were expected to share this space with the IG. The TOC is staffed by at least two OSJA personnel at any given time. The space provided is simply not adequate for two people.

Recommendation: Allow room for at least one more person in the OSJA space of the van, either re-locating the OSJA to a larger space or relocating the G5.

Issue: Timely publishing of the ROE.

Discussion: The final Chairman of the Joint Chiefs of Staff (CJCS) ROE arrived after the division moved to tactical assembly areas (TAAs). Although a draft version of the ROE had been provided to 3ID (M) for comment several months earlier, the final ROE included new guidance on high collateral-damage targets. Late receipt of ROE caused confusion on a number of issues that were not clearly written. These matters were not resolved until hostilities began, meaning we could not train soldiers on the provisions.

Recommendation: Subject to National Command Authority (NCA) approval, we should make all efforts to ensure that the ROE are published early enough so that the information can be pushed down to the soldier pulling the trigger.

Chapter 31

Staff Judge Advocate (SJA)

Topic C - Hostilities

Issue: EPWs, displaced civilians (DCs), and LOW violators.

Discussion: Displaced civilians were routinely sent to the EPW holding areas. This caused the holding areas to be overwhelmed and put civilians and EPWs in close proximity (although separated by concertina wire). The primary cause was the failure of civil affairs teams to operate displaced civilian collection points (DCCPs). A secondary problem was that the enemy fought in civilian clothes, causing our units to detain civilians who were on the battlefield, mistakenly thinking that they may have been engaged in hostilities. Units failed to tag EPWs properly, so the EPW collection area did not know whether the civilians were combatants wearing civilian clothes or true civilians. Finally, some civilians who read the PSYOPs leaflets misunderstood the message intended for soldiers and later these civilians "surrendered" to us. We could

not readily identify LOW violators within the ranks of our EPWs, because units did not tag EPWs as directed.

Recommendation: DCCPs must be established and manned. Units must tag EPWs at the first available opportunity after they are captured and note specifics of their capture (i.e., committed LOW violations) and ensure this data is passed, with the prisoners, to higher.

Issue: ROE target approval authority.

Discussion: The ROE for targeting structures, including traditional military facilities, was much too restrictive. Approval for targeting structures was withheld to Coalition Force Land Component Command (CFLCC), Central Command (CENTCOM), and Secretary of Defense (SECDEF) levels, even in cases of time-sensitive targets. This significantly hindered the 3ID (M) from prosecuting valid military targets in a timely manner.

Recommendation: Withhold targeting approval authority for targets within the division's AO to no higher than division commander level.

Issue: ROE change requests

Discussion: Several ROE change requests were submitted by BCTs throughout hostilities. The division provided responses very quickly, permitting the BCTs to implement new ROE almost on-the-spot.

Recommendation: Sustain speedy responses on ROE change requests.

Issue: Battlefield property acquisition books.

Discussion: The CFLCC OSJA printed battlefield property acquisition books to be used by units who had to seize or requisition civilian property for military use. The books consisted of receipts with carbon copies and instructions for use. The books arrived after 3ID (M) had moved to TAAs. As a result, not all units received the books prior to line of departure (LD). The property receipts included a line for the preparer's social security numbers. It was unwise to give SSNs to members of the Iraqi population.

Recommendation: Sustain the issuance of battlefield property acquisition books. Ensure timely distribution of the books. Do not include the preparer's SSN on the property receipt. If the SSN is necessary for tracking, ensure that is included only on the copy that is retained by the unit and is not provided to civilians.

Issue: Information flow.

Discussion: Poor information flow during the battle regarding the civilian combatants and other LOW violations may have subjected soldiers to harm. Individuals wearing civilian clothes engaged the 1st Marine Expeditionary Force (MEF) and some 3ID (M) units. Yet word of this was not immediately relayed throughout the division. Rear convoys particularly were unaware that individuals wearing civilian clothing or driving in civilian vehicles might target them. It is unclear whether any injury would have been prevented by this knowledge, but such information must be relayed to all on the battlefield to permit soldiers to be prepared to face the enemy.

Recommendation: Improve information flow by consistently ensuring that appropriate lines of communication are open. Leaders must drop down from the command net and give updates on the convoy net.

Issue: Embedded media.

Discussion: The guidance on embedded media access to information was either misunderstood or not enforced. Also, control on the practices and discipline of the embedded media needs to be increased in the future, perhaps subjecting them to the same limitations and restriction expected from our soldiers in order to ensure good order and discipline.

Recommendation: Ensure that the guidance on embedded media access to information is clear and understood by all. Look at subjecting them to restrictions on their conduct, such as the general order for the theater.

Issue: Fratricide investigations.

Discussion: DoDI 6055.7, Accident Investigation, Reporting, and Record Keeping, requires that the combatant commander convene a legal investigation for all friendly fire incidents. Despite requesting through SJA channels that the Commander, USCENTCOM, appoint AR 15-6 investigations in 3ID (M) suspected fratricide cases, none were ever appointed. In the absence, 3ID (M) appointed AR 15-6 investigations at its level for every fratricide incident.

Recommendation: Procedures for having higher headquarters appoint required investigations must be establish prior to hostilities.

Chapter 31

Staff Judge Advocate (SJA)

Topic D - Stability and Support Operations (SASO)

Issue: War trophies and property damage.

Discussion: We properly addressed property issues in ROE and General Order Number One Alpha training. However, soldiers destroyed, damaged, or removed property.

Recommendation: Ensure the policy on war trophies is included in all training. Ensure that guidance is uniform across the division. Have commanders strenuously reinforce rules regarding property. Prevent soldiers from looting or unnecessarily damaging property. Protect all property in place until commanders decide to use the property for official purposes.

Issue: Fiscal law.

Discussion: Fiscal policy concerns and confusion slowed progress in the civil affairs and SASO area. The division's use of captured money (both dinars and dollars) was unnecessarily restricted, resulting in delays in reconstruction efforts in Baghdad. An unnecessarily restrictive policy regarding the use of this money delayed SASO efforts.

The division confiscated dinars and proposed to use the money to purchase water for the local population, eliminating the need for locals to transit through a checkpoint to retrieve water. This request followed a car bombing at a U.S. checkpoint that killed four soldiers. Incredibly, concerns at higher headquarters regarding policy issues related to the use of the money delayed this force protection measure.

Later, the division confiscated almost 1 billion dollars from Baghdad palaces. We had the legal authority under customary and codified international law to spend the money. Higher authorities again instructed division to not use the money to fund projects fulfilling obligations as an occupying power under international law, or responding to legitimate needs within Baghdad. Our failure to act quickly with this money negatively impacted the local population's views and support for U.S. troops. The money could have been used to hire, train, and equip the police force; clear the rubble from government buildings and city streets; hire sanitation workers and other municipal employees; clean up the courts and hire judicial personnel. These workers, along with civil affairs operations, could have reestablished power, water, sewer, police, and fire support for Baghdad as well as cleaned the streets. The decision delayed such progress. At first, the people were anxious to get started and looked to the U.S. for assistance. They soon saw us as being unable or unwilling to get anything done.

Recommendation: War plans should not restrict for policy reasons the expenditure of confiscated money or other funds for critical projects. Higher officials must understand that their reticence on this issue delayed and perhaps even jeopardized successful SASO.

Issue: For political reasons, leaders declared that U.S. forces were "liberating forces" rather than occupying forces. This may have caused military commanders to be reluctant to use the full power granted to occupying forces to accomplish our legitimate objectives.

Discussion: As a matter of law and fact, the United States is an occupying power in Iraq, even if we characterize ourselves as liberators. Under International Law, occupation is a de facto status that occurs when an invading army takes effective control of a portion of another country. If necessary to maintain this public affairs position, our national command should have stated that while we were "liberators," we intended to comply with International Law requirements regarding occupation. This status would have provided us authority to control almost every aspect of the Iraqi life, including the civilian population, government, resources, and facilities, making it easier for us to accomplish all SASO missions. Occupation law also imposed upon us obligations to protect the civilian population to the best of our ability. Because of the refusal to acknowledge occupier status, commanders did not initially take measures available to occupying powers, such as imposing curfews, directing civilians to return to work, and controlling the local governments and populace. The failure to act after we displaced the regime created a power vacuum, which others immediately tried to fill.

Recommendation: Military leaders must use authority granted occupying forces. We could have done this consistent with our government's stated position.

Issue: No civilian authority in place prepared to serve as civilian administrator of Iraq and no Phase IV plan.

Discussion: The President announced that our national goal was "regime change." Yet there was no timely plan prepared for the obvious consequences of a regime change.

As late as 15 April, Office of Reconstruction and Humanitarian Assistance (ORHA) had, at best, a working draft plan of post Saddam Iraq. Additionally, the delay in having the civilian authority on the ground (while perhaps justified by security concerns) made commanders reluctant to move too quickly regarding Phase IV SASO activities, as they were concerned that their actions might be inconsistent with ORHA efforts – which either did not exist or had not been shared with the military. Despite the virtual certainty that the military would accomplish the regime change, there was no plan for oversight and reconstruction, even after the division arrived in Baghdad.

Recommendation: Resolution of this is not in division control. State, Defense, and other relevant agencies must do a better and timelier job planning occupation governance and standing up a new Iraqi government. If this is not possible, the best alternative would have been to let the military plan and execute the mission for a month or more, then turn it over to the civilian overseer. This would have avoided the power/authority vacuum created by our failure to immediately replace key government institutions.

Issue: Civil affairs coordination

Discussion: The civil affairs units operating in Baghdad today initially seemed to lack central coordination and effective integration with the 3ID (M). The first unit to arrive, the 422nd Civil Affairs Battalion was ill equipped to handle the entire city of Baghdad. Although other CA assets were available, the CA brigade failed to recognize that Baghdad was the center of gravity for the Iraqi campaign. They decided to resolve issues as they encountered them in other cities along the road to Baghdad from Kuwait. Subject to hearing additional information about the thought process behind this approach, it seems fair at this point to say that Baghdad should have been the priority.

Recommendation: We need to ensure the civil affairs is fully integrated with the division. The CA plan should match theater priorities.

Issue: Baghdad police department

Discussion: The Baghdad police department originally had approximately 40,000 officers. Upon completion of the war, there were approximately 2,500. This force has not yet hit the streets, even though the need was immediate and great. The JAG Office was ready to teach these officers immediately, to better enable them to serve the public. To date, this has not occurred. The rules from higher headquarters regarding the police were unclear, especially regarding soldier escorts, police arrest powers, detaining police who were suspected of misconduct, and other issues. As BCTs interpreted these rules differently, we unsuccessfully sought a change to the ROE.

Recommendation: Higher headquarters needs to understand the immediate need and impact of the local police in the aftermath of war. The people wanted police and needed security. But we had no plan to accomplish this.

Issue: Trial defense service.

Discussion: Originally, the one TDS counsel for division was located at Camp Doha, Kuwait, approximately two hours away from any of the camps at which the BOLTs were located. It was impossible to move military justice actions forward, because the TDS counsel was not accessible by phone, and it detracted from units' missions to travel four hours to get one soldier to TDS. Later, the TDS counsel collocated with the DREAR.

This BOLT arranged to have the TDS counsel come to Camp Pennsylvania one day per week. The TDS counsel did not have his own transportation or 27D, so this BOLT was forced to transport him back and forth. Once that routine was established, it was convenient for units (who brought all their soldiers on an established day of the week to TDS) and justice actions actually began moving forward.

Recommendation: TDS should be located centrally in the division. TDS should have its own vehicle and 27D. Consider bringing one more TDS attorney to help with caseload and to assist with conflict cases. These things would drastically improve TDS's ability to perform its duties and would make TDS a better combat multiplier. BOLTs should establish a regular schedule to have TDS present at the brigade to advise clients. OSJA, Criminal Law Division should create a plan for justice operations, to include TDS, before deployment and then tweak the plan as necessary.

Issue: Location of BOLT during movement

Discussion: To properly advise commanders on ROE issues and other matters, the BOLT must remain collocated with the XO and FSO and/or commander.

Recommendation: Commanders should collocate with their legal officers.

Issue: Law of war violators

Discussion: We encountered many combatants who fought in civilian clothes and civilian vehicles, thereby violating the Hague Conventions. However, we could not readily identify those violators within the ranks of our EPWs, because units did not tag EPWs as directed in the BCT operations order (OPORD). Those EPWs then intermingled with the displaced civilians who were also taken to the EPW holding areas, so potential law of war violators could not be readily distinguished.

Recommendation: Units must tag EPWs at the first available opportunity after they are captured and before they are turned over to someone who knows nothing about their capture.

Issue: Medical treatment of EPWs

Discussion: Division guidance not to use air medical evacuation (MEDEVAC) for EPWs during one battle due to the threat of being shot down by enemy fire was mistakenly interpreted as a directive to not fly enemy wounded. This was corrected in a few days, as soon as division learned of the mistaken interpretation of the order.

Recommendation: Train medical evacuation personnel on LOW to ensure they know their obligations

Issue: ROE regarding local police

Discussion: During SASO, local police started "policing" again despite the fact that the criminal justice system was defunct. All arrestees were placed in jail and held until trial with no review of the necessity for continued pretrial confinement. Because there would be no trials in the near future, arrestees would spend an indefinite amount of time in jail without a trial. U.S. forces also did not know which police officers were connected to the Hussein regime or were merely donning the uniform to conceal their status as paramilitary forces. Local police were bearing arms (specifically AK 47s) and were

wearing uniforms very similar to Iraq's Republican Guard soldiers. Higher headquarters did not produce ROE regarding these "rogue" police. BOLTs requested ROE permitting U.S. forces to detain any local police who were without a U.S. escort and were attempting to make arrests and/or were bearing military weapons. The purpose was to enhance soldier safety, to serve as an interim measure to ensure dual patrols of local police and U.S. soldiers, and to ensure all arrestees were processed through our system.

Recommendation: Anticipate such issues during SASO and give clear, timely guidance regarding police activities.

Issue: Automation equipment's durability, re-supply, and tactical satellite (TACSAT) phone

Discussion: Current automation fails to stand up to the field environment. Automation exists that can handle the battlefield environment. Automation was provided by the OSJA through HHC, 3ID (M), however, due to monetary limits, appropriate automation could not be purchased. Special forces and Fort Bragg have automation equipment that can survive on today's battlefield, however, it is expensive. Due to the fluid nature of the battlefield TACSAT phone for the OSJA office is a must. Regular communications are unpredictable and access is limited to other sections phones.

Recommendations: Purchase appropriate automation for deployment and issue to appropriate attorney or paralegal for use in garrison to become familiar with capabilities. Equipment needed for each BOLT:

- 2 laptops
- 2 printers
- 2 scanners
- 1 digital camera
- 1 fax machine
- 2 palm pilots

Issue: Initial supplies for deployment.

Discussion: Initial supplies need to be airlifted with deploying BOLTS and offices. They should include enough supplies to function for two weeks or until supply channels are established. The OSJA is not a stand-alone unit, thus HHC, 3ID (M) or HHC, DISCOM have to acquire needed supplies. Most of the OSJA's office supplies were shipped with CONEXs and took 4 weeks to arrive. HHC, 3ID (M) did not allocate cargo space for the OSJA's supplies.

Recommendations: All units must allocate space on aircraft for OSJA DMAIN and DTAC's supplies. Establish a fund site channel that the legal administrator and CPLNCO can utilize for purchase of supplies and equipment. Establish FSOP with DISCOM that outlines their responsibility to the OSJA DREAR (i.e. tents, vehicles, comfort items).

Issue: Plan for Phase IV operations.

Discussion: Higher headquarters did not provide the 3ID (M) with a plan for Phase IV. As a result, 3ID (M) transitioned into Phase IV operations in the absence of guidance.

Recommendations: Division planners should have drafted detailed plans on Phase IV operations that would have allow it to operate independently outside of guidance from higher headquarters. Critical requirements should have been identified prior to LD, and a plan to execute a SASO mission for at least 30 days should have been ready to execute immediately. A liaison officer (LNO) from ORHA during planning would have greatly assisted this process.