USAWC STRATEGY RESEARCH PROJECT

OPTIMIZING THE UNIT OF ACTION BASED MECHANIZED INFANTRY DIVISION FOR HIGH INTENSITY CONFLICT

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		Form Approved OMB No. 0704-0188
	Report Documentation Page	*Form Approved* *OMB No. 0704-0188*

| Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. |

1. REPORT DATE **03 MAY 2004**	2. REPORT TYPE	3. DATES COVERED **-**
4. TITLE AND SUBTITLE **Optimizing the Unit of Action Based Mechanized Infantry Division for High Intensity Conflict**		5a. CONTRACT NUMBER
		5b. GRANT NUMBER
		5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S) **Peter Bayer**		5d. PROJECT NUMBER
		5e. TASK NUMBER
		5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **U.S. Army War College,Carlisle Barracks,Carlisle,PA,17013-5050**		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)

| 12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited |

| 13. SUPPLEMENTARY NOTES |

| 14. ABSTRACT
See attached file. |

| 15. SUBJECT TERMS |

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES **45**	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**			

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18

ABSTRACT

AUTHOR: Lieutenant Colonel Peter C. Bayer, Jr.

TITLE: OPTIMIZING THE UNIT OF ACTION BASED MECHANIZED INFANTRY
            DIVISION FOR HIGH INTENSITY CONFLICT

FORMAT: Strategy Research Project

DATE: 19 March 2004   PAGES: 45   CLASSIFICATION: Unclassified

The Chief of Staff of the Army (CSA) has initiated a series of actions to ensure that the Army remains relevant and ready: a joint focused force with an expeditionary mindset. Among his principle initiatives is an effort to immediately create a more agile, lethal and joint capable force organized around a concept of modular brigade size "Units of Action" (UA). The CSA has tasked the 3rd Infantry Division (Mechanized) to internally reorganize the division during FY04 from its current three maneuver Brigade Combat Team (BCT) configuration into an organization with up to five Brigade sized (UA) while maintaining the capability to deploy and fight across the full spectrum of conflict. In concept the reorganized UA's, when provided enhanced Command, Control, Communications, Computers, Intelligence, Reconnaissance and Surveillance (C4ISR) systems and access to joint fires capabilities will be at least as lethal as the current BCT structure fought very successfully by the 3rd Infantry Division (Mechanized) during Operation Iraqi Freedom.   However, the reorganized division will not be equipped with new combat systems and given the probable challenges of providing new C4ISR systems in the near term, the aggregate combat capability of the division will most likely remain unchanged. While a strong case can be made that the division can quickly adapt its new structure for employment in Stability or Support operations, the question of how well a newly reorganized Mechanized Infantry Division can fight in a High Intensity Conflict environment is not as easily apparent. This paper will analyze the maneuver, firepower and information elements of combat power to assess the ability of a UA based Mechanized Infantry Division to successfully fight on the potential high intensity battlefield during the next 5-10 years.

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> We will retain our dominance on land providing the combatant commander with agile, versatile, and strategically responsive forces completely integrated and synchronized with other members of the joint and interagency team and with our coalition partners… Our Army must move toward modular based capabilities-based unit designs nested within the joint network and enabled by a Joint and Expeditionary mindset.
>
> —General Peter Schoomaker
> Chief of Staff, United States Army
> 7 October 2003

The Chief of Staff of the Army (CSA) has initiated a series of actions to ensure that the Army remains relevant and ready: a joint focused force with an expeditionary mindset. Among his principle initiatives is an effort to immediately create a more strategically agile, lethal and joint capable force empowered by an increased number of battlefield enablers and improved joint connectivity[1] organized around a concept of smaller, independently deployable and modular brigade size "Units of Action".[2] It is believed the creation of more independently deployable maneuver brigade size entities improves the ability of the Army to meet operational requirements while also ensuring that a division does not need to deploy every time a brigade size unit is required.[3] This concept of a more modular and joint interdependent force is nested in the recently published Joint Operation Concepts that describes the future Joint Force as possessing these critical attributes: fully integrated, expeditionary, networked, decentralized, adaptable, capable of decision superiority and lethal.[4]

The CSA has tasked the 3rd Infantry Division (Mechanized) (3rd ID(M)) to internally reorganize the division during FY04 from its current three maneuver Brigade Combat Team (BCT) configuration into an organization with up to five Brigade sized Units of Action (UA) while maintaining the capability to deploy and fight across the full spectrum of conflict. In concept, the reorganized UA's, when provided enhanced Command, Control, Communications, Computers, Intelligence, Reconnaissance and Surveillance (C4ISR) systems and access to joint fires capabilities will be at least as lethal as the current BCT structure fought very successfully by the 3rd ID(M) during Operation Iraqi Freedom (OIF). A major premise of this construct is that these new formations will have access to joint fires at a rate equal to or greater than that previously experienced during any prior U. S. conflict or campaign.[5]

Current plans do not call for the reorganized division to be equipped with new combat systems and given the probable challenges of providing new C4ISR capabilities in the next few

years, the aggregate combat capability of both the division and its UA's will initially remain unchanged upon reorganization and will only see a limited growth in capability over the next 1-5 years. While a strong case can be made that the division can adapt its new structure for employment in Stability or Support operations without significant problems, the question of how well a newly reorganized Mechanized Infantry Division or its independently deployed UA's can fight in a High Intensity Conflict (HIC) environment is not as easily apparent. This paper will analyze the maneuver, firepower and information elements of combat power[6] to assess the ability of a UA based Mechanized Infantry Division to successfully fight on a high intensity battlefield during the next 5-10 years and will make recommendations based on resources and assets realistically available to the Army in the near term to attempt to optimize its capability to fight and win in such an environment.
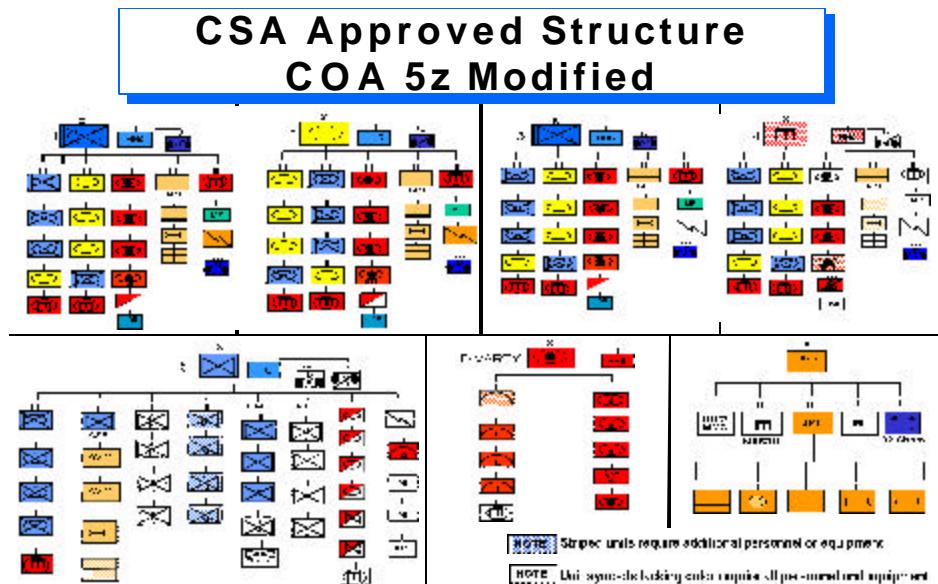

FIGURE 1. CSA APPROVED DIVISION DESIGN.[7]

REORGANIZATION OF THE 3RD INFANTRY DIVISION (MECHANIZED)

In September 2003 the CSA provided guidance to MG William G. Webster, Commanding General of the 3rd ID(M) to execute a redesign and reorganization of the division beginning in January 2004. Principal elements of his guidance for reorganization of the division included: use of spiral development to create BCT-like maneuver elements as the basic

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maneuver module for Army forces optimized for HIC with inherent joint capabilities, capable of working for any division headquarters or independently in a theater or non-contiguous battlespace and logistically self-contained until theater logistics are set.[8] Based on the CSA's guidance and with an emphasis on optimizing the redesigned formations for HIC[9] the division developed multiple courses of action (COA) and gained CSA approval in November 2003 for the redesign COA depicted in Figure 1. Figure 2 depicts the current 3 rd ID(M), BCT-based, division structure fought during OIF. Figure 3 depicts the 3 rd ID(M) comparison of a BCT and UA for critical combat systems and Soldiers based on the CSA approved COA.
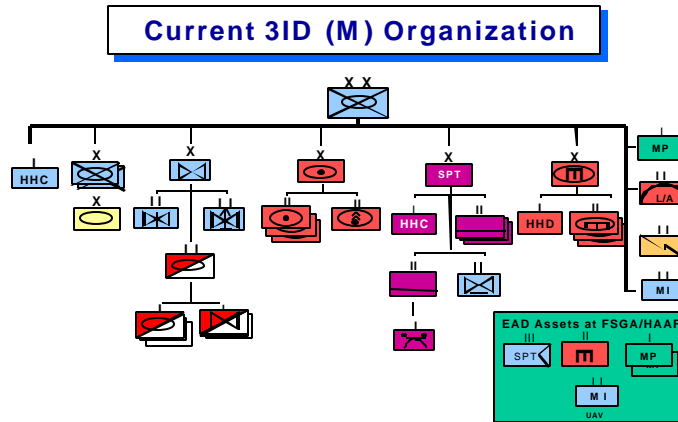
Current 3ID (M) Organization

FIGURE 2. CURRENT DIVISION ORGANIZATION.[10]
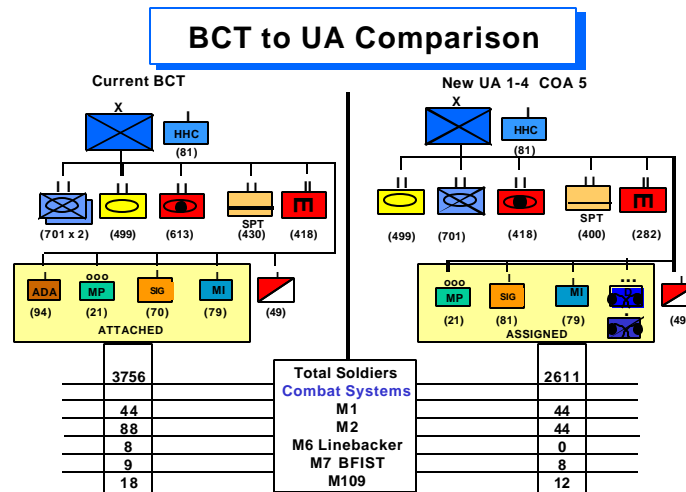
BCT to UA Comparison

FIGURE 3. BCT TO UA COMPARISION.[11]

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Principal changes to division organization in the initial, CSA approved UA construct include the following:

- The creation of an additional maneuver UA, UA 4, built around the existing Engineer Brigade headquarters

- The permanent assignment of the traditional direct support (DS) Artillery, Engineer, and Forward Support Battalions as well as Military Intelligence (MI), Military Police (MP) and Signal Companies and a Chemical Platoon to the UA. The division has requested additional resources to create a two platoon MP Company.

- Creation of permanently task organized maneuver Task Forces (TF) in lieu of current Mechanized Infantry and Armor Battalions.

- Reduction from three to two maneuvers TF in each of the four UA's. This is a net loss of three maneuver companies and a total reduction of 1145 total Soldiers per UA and a loss of 431 11 series Infantry Soldiers from the current Mechanized Infantry Heavy BCT.[12]

- The restructuring of the UA Artillery Battalions from 18 guns to 12 guns organized into two firing batteries with six 155mm Paladin Howitzers each, a combined service and headquarters battery, the direct support MI Company and the Brigade Reconnaissance Troop (BRT). A fourth and new DS Artillery Battalion headquarters as well as headquarters and service battery, a DS MI Company and BRT must be created for UA 4.

- The assignment of the DS Signal Company, a Chemical Platoon and a MP Company (-), if resourced, to the DS Engineer Battalion in each UA. A fourth and new Engineer Battalion headquarters must be created for UA 4.

- A smaller Division Artillery Brigade built around the Multiple Launch Rocket System Battalion and the assignment of the divisional Short Range Air Defense Battalion less one Avenger Battery assigned to UA 5.

- Creation of an Aviation based UA 5 that includes the assignment of a Mechanized Infantry Battalion, an Aviation Support Battalion, two Attack Aviation Battalions (24 x AH-64 Apaches each), an Air Assault Lift Battalion (30 x UH-60), a General Support Aviation Battalion composed of a Chinook Company (12 x CH-47), a Command and Control Company (8x UH-60) and a Air Medical Evacuation Company (12 x UH-60). UA 5 will also be assigned an Avenger equipped Air Defense Battery, Signal, MI and MP Companies as well as an Air Traffic Services Company and an Unmanned Aerial

Vehicle (UAV) Company. The additional aviation assets assigned to UA 5 reflect the recently approved Army Aviation restructuring initiative.[13]

- A smaller Division Support Command consisting primarily of the Main Support Battalion and a Combat Heavy Engineer Battalion.

THE HIGH INTENSITY BATTLEFIELD THREAT

While the United States currently has no true peer competitor on the world stage in terms of military strength and the ability to project power, there remain several nations that pose viable threats to regional and international security, not the least of which is the Democratic People's Republic of Korea (DPRK). North Korea has been characterized as unstable, unpredictable, armed and dangerous[14] and at some risk for internal regime collapse or even worse, the potential for a dangerous provocation of the U.S. with regard to Weapons of Mass Destruction (WMD) possession, either of which could catapult the U.S. and its South Korean allies into a high intensity conflict on the Korean Peninsula.[15] The primary strategic goal of the Regime of Kim Jong Il remains reunification with South Korea and the military strategy of the DPRK is offensive in nature; designed to provide the Regime a formula for victory that incorporates surprise, overwhelming firepower and speed.[16]

The North Korean Army is estimated to have roughly 900,000 soldiers in active service with some 4,000,000 reserves.[17] Among the principle capabilities of the DPRK armed forces are 100,000 Special Forces soldiers; 2950 Main Battle Tanks; a modernized and robust air defense system; 500 combat aircraft[18] and over 13,000 artillery and multiple rocket systems including approximately 1,100 long-range pieces capable of firing projectiles 70 kilometers.[19] An estimated 65 % of its armed forces are positioned south of the P'yongyang-Wonsan line, clearly prepared for immediate offensive operations.[20] Numerous sources report a series of extensive underground bunkers, tunnels and facilities that support the forward deployed soldiers and offensive capability of the North Korean military. Further, the DPRK possess not only WMD capabilities but also the long range missiles and artillery capable of delivering chemical and biological agents.[21]

The 560,000 soldiers of a very capable South Korean Army and their 31,000 U.S. Army counterparts[22] stationed in South Korea would face a formidable challenge if attacked by North Korea. A fight with North Korea would require substantial commitment of military resources by both nations and would clearly be characterized as high intensity requiring the application of synchronized combined arms capabilities to win.

ANALYSIS AND ASSESSMENT OF A REORGANIZED UNIT OF ACTION BASED MECHANIZED INFANTRY DIVISION

The reorganization of the 3rd ID(M) will drive changes in the way leaders and Soldiers think about, train for and execute full spectrum combat operations. Clearly, changes will occur across the Doctrine, Organizational design, Training strategy, Leadership and education, Material, Personnel and Facilities continuum. The revamped design provides no significant upgrade in numbers or capability of combat systems or weaponry and in fact, reduces total Army systems allocated to each independent UA. The new structure does, however, entail a significant change in how we think about warfighting and organizing maneuver forces for employment and how combat capabilities, combat support and combat service support enablers are teamed and integrated to achieve a higher degree of effectiveness and efficiency on the battlefield.

An analysis of the UA-based division utilizing the five elements of combat power as described in FM 3.0, *Operations*, provides a useful construct to assess the impacts of reorganization and provide recommendations for optimization of both the UA and the division for operations in a HIC environment. Combat power is defined as "the ability to fight…It is the total means of destructive or disruptive force, or both, that a military unit or formation can apply against the adversary at any given time."[23] The elements of combat power as defined in Chapter 4 of FM 3.0, *Operations*, are:

> Maneuver: the employment of forces, through movement combined with fire or fire potential, to achieve a position of advantage with respect to the enemy to accomplish the mission. Maneuver is the means by which commanders concentrate combat power to achieve surprise, shock, momentum, and dominance.
>
> Firepower: the amount of fires that a position, unit, or weapons system can deliver. Fires are effects of lethal and non-lethal weapons. Fires include fire support functions used separately from or in combination with maneuver.
>
> Leadership: the most dynamic element of combat power. Confident, audacious, and competent leadership focuses the other elements of combat power and serves as the catalyst that creates conditions for success.
>
> Protection: the preservation of the fighting potential of a force so the commander can apply maximum force at the decisive time and place. Protection has four components: force protection, field discipline, safety, and fratricide avoidance.
>
> Information: enhances leadership and magnifies the effects of maneuver, firepower, and protection. The common operational picture (COP) based on enhanced intelligence, surveillance, and reconnaissance (ISR) and disseminated by modern information systems provides commanders throughout the force with an accurate, near real-time perspective and knowledge of the situation.[24]

The combat power elements of Maneuver, Firepower and Information will be utilized to analyze and assess the capability of the reorganized 3 rd ID(M). The seven critical tactical level functions, doctrinally known as the Battlefield Operating Systems (BOS),[25] that are commonly used to synchronize and organize tactical elements will be addressed in the context of the combat power analysis. Germane observations on Combat Service Support and Mobility, Countermobility and Survivability will be addressed as part of Maneuver while Intelligence and Command and Control (C2) comments will be integrated under the Information element of combat power.

MANEUVER

Our doctrine defines maneuver as the decisive element of combat power. The fundamental basis for the organization and operations of Army forces is the principle of combined arms operations.

> Combined arms is the synchronized or simultaneous application of several arms—such as infantry, armor, field artillery, engineers, air defense, and aviation—to achieve an effect on the enemy that is greater than if each arm was used against the enemy separately or in sequence. The ultimate goal of Army organization for operations remains success in joint and combined arms warfare. Its combined arms capability allows commanders to form Army combat, CS, and CSS forces into cohesive teams focused on common goals.[26]

Effective integration of this baseline doctrinal principle was demonstrated during recent campaigns in both Afghanistan as part of Operation Enduring Freedom (OEF) and Iraq during OIF. The value and capabilities of combined arms maneuver integrated with effective fires were instrumental in the overwhelming success that the U.S. military and specifically the Army demonstrated on both these unique battlefields. Key lessons from OEF reinforce the combination of "heavy, well-directed fires with skilled ground maneuver to exploit their effects and overwhelm the surviving enemy."[27] Similar observations have been made in numerous After Action Reviews (AAR) and journal articles concerning the decisive lethality of both the Army and the Joint combined arms team during OIF. [28]

The assignment of all maneuver, combat support (CS) and Combat Service Support (CSS) formations to the UA maneuver commander really does not significantly change the training and habitually task organized operational relationships that exist in the current BCT's. However, permanent assignment of CS and CSS formations to the UA should allow the unit to reap the benefits associated with daily combined arms task organization, training and logistics operations improving the combat capability of the formation.[29] A potentially significant drawback to the UA organization is the loss of senior, Brigade Commander level technical, tactical and

leadership mentoring for CS and CSS units that currently is provided via the BCT task organization construct.[30] It should be noted the Army has previously experimented with the Combined Arms Battalion task organization concept and chose not to modify the traditional pure battalion organization model.

The most dramatic change in organization of the UA is the reduction from three to two maneuver battalions for a total of only six maneuver companies per UA and the resulting loss of over 400 Infantry Soldiers in the new UA. 3rd ID(M) brigade level formations that had 12 Infantry or Armor companies as recently as 2000 now have only six maneuver companies, a reduction of 50% in ground maneuver capability. [31] While the three task force, nine company BCT performed well during OIF,[32] interviews with current and former 3rd ID(M) BCT and TF level commanders as well as a review of the 3rd ID(M) OIF AAR indicate that this loss of ground maneuver formations causes significant concerns.

A smaller ground maneuver UA will have a decreased ability to perform assigned tasks in a battlespace comparable in size to that assigned to the 3rd ID(M) BCT's during OIF. The loss of a maneuver task force will limit the amount of battlepsace a UA can be assigned, particularly in a non-contiguous environment like that experienced by the division in Iraq.[33] As a result, the division may be required to assign multiple UA's to perform tactical tasks in a battlespace previously assigned to one BCT for the execution of the same tasks increasing the C2 complexity of division level tactical operations.

3rd ID(M) combat operations in Iraq on 5 April 2003 illustrate this point. The division was conducting combat operations in a area that was approximately 90 kilometers wide by 100 kilometers deep bounded roughly by Baghdad International Airport (BIAP) in western Baghdad, east to the Tigris River just to the south of the capital city, south to the city of Al Hillah and west to the city of Karbala. The 1st BCT conducted urban combat operations vicinity BIAP to clear defending forces, the 3rd BCT completed a relief in place with the 2nd BCT of the 101st Airborne Division (Air Assault) near Karbala and moved to attack positions just west of the Euphrates River in preparation for an attack to seize an objective northwest of Baghdad on 6 April 2003, 3-7 Cavalry (the Divisional Cavalry Squadron) conducted guard operations west of Baghdad to protect the division western flank and the 2nd BCT conducted combat operations south of Baghdad.[34]

A closer examination of the 2nd BCT fight on 5 April 2003 vicinity of Baghdad illustrates the battlespace and troops to task issues well. The BCT zone covered an area approximately 50 kilometers wide (from the Euphrates River to the Tigris River) and 70 kilometers deep, from Highway 8 and BIAP south to just north of the city of Al Hillah. The 2nd BCT conducted

simultaneous high intensity combat operations throughout the entire BCT battlespace as TF 3-15 IN attacked to destroy enemy formations in the western portion of the BCT zone along the Euphrates River while TF 4-64 Armor conducted attacks against remaining elements of the 10th Armored Brigade of the Republican Guard Medina Division in the eastern portion of the BCT zone west of Highway 1 and east of the Tigris River and TF 1-64 AR conducted the BCT main attack to penetrate Iraqi defensive positions in Baghdad along Highway 8 and conduct a link-up with the 1st BCT at BIAP.[35] The 2nd BCT provided command and control and fire support concurrently for all three successful attacks. A two task force, six company UA could not have conducted the simultaneous operations and number of tactical tasks that the 2nd BCT executed[36] nor could the division have assigned another UA or battalion level combat formation to execute the assigned tasks. If the division had been a UA based organization on 5 April 2003, several different possibilities for how combat operations would have changed exist: the tempo of ground maneuver operations would have been slower; the division would have been forced to accept undue risk in one or more BCT operation; the size of the division battlespace would have been reduced; or a combination of all three might have occurred.

The reduction in maneuver forces assigned to a UA will have several other important effects. First, it will restrict and potentially prohibit the creation of a ground maneuver reserve at both UA and TF level and significantly constrain the ability of the UA commander to weight the main effort with ground maneuver forces.[37] Second, it will reduce the flexibility of the UA or TF commander to react to the unknown or unexpected enemy action.[38] Third, it will severely degrade the ability of a UA to conduct offensive operations requiring a deliberate breach larger than TF size, a tactical task highly probable to occur on a HIC battlefield like Korea. Current doctrine outlines a requirement for a support, breach and assault force during breach operations[39] and the lack of a third TF will restrict execution at UA level. Execution of the breach may require the assignment of an additional TF to the UA or another UA, even after factoring in the probable impact of joint fires targeted against the defending enemy. Fourth, it will limit the ability to conduct continuous operations on a high tempo, non-contiguous battlefield at a tempo similar to that executed by 3rd ID(M) units during 21 continuous days of combat operations penetrating over 400 miles into Iraq during OIF.[40] Fewer maneuver formations and troops will either slow the pace of combat operations or quickly degrade the performance of Soldiers during extended operations periods required to make up for the deficit in maneuver units.[41] Fifth, maneuver units will be severely constrained in their ability to provide force protection for CS or CSS formations. This will further make the fundamental requirement for non-maneuver units to provide their own force protection even more urgent.[42] Sixth, it could

potentially slow the pace of maintenance and sustainment operations as Soldiers and units focus on direct combat related tasks.[43] Finally, the tremendous reduction in Infantry Soldiers will significantly constrain the ability of a UA to execute close tactical operations common to urban areas involving clearing or dismounted fights vs. enemy Infantry.

The absence of a third TF in the UA organization and its probable effects on troop to task and battlespace capability begs the question of how to improve or enhance ground maneuver capability in the UA assuming the addition of no significantly more capable weapons systems. Current 3rd ID(M) UA design provides an Engineer Company as an interim fourth maneuver company.[44] Use of an Engineer company as a maneuver formation in a HIC environment is not considered a desirable COA. Even though Engineers are doctrinally prepared to serve as Infantrymen as a secondary skill, the M113 and .50 Caliber machine gun equipped Engineer Company will have difficulty effectively integrating with an M1 Abrams and M2 Bradley force in the direct fire fight or during extended offensive operations. Further, the dedication of Engineers to maintaining Infantry skills at the requisite level of expertise will significantly degrade their primary skill set as Combat Engineers.[45] As a final note on the use of Engineers as a maneuver force it is not apparent that experiences in OIF provide the proper perspective to make decisions concerning their utilization in a HIC environment. The 3rd ID(M) Combat Engineers performed a statistically insignificant number of traditional Mobility, Countermobility and Survivability missions for the division during OIF major combat operations. As an example, the division encountered only seven Iraqi minefields and emplaced no minefields of its own.[46]

Based on an analysis of OIF HIC operations and the perspective of former and current division BCT and TF maneuver commanders, the addition of a true fourth maneuver company per TF emerges as a viable option to mitigate the loss of the third TF.[47] If the two TF's in each UA were resourced with a fourth maneuver company the UA would have eight maneuver companies, a net loss of only one from the current BCT configuration. The 3rd ID(M) division leadership has acknowledged the addition of a fourth maneuver company as an issue of concern to higher headquarters.[48] Others have noted the need for sufficient maneuver forces in our tactical formations. Colonel Douglas MacGregor advocates four maneuver companies per TF in his UA like Combat Group design outlined in his 1997 work, *Breaking the Phalanax*.[49] Macgregor also addresses the issue in an article in the January 2004 publication *Defense Horizons* where he states "battalions and brigades today are too small for either warfighting or post-war security operations. Robust battalions of 800 or more soldiers are necessary to provide the density of boots on the ground needed today in Iraq and Afghanistan."[50] In a recent

Army Magazine article, LTG (Ret) Paul Blackwell and COL (Ret) Richard Dunn also suggest a shortage of Infantry units exists in our current BCT's based on their observations of current operations in Iraq.[51]

Several options to form a fourth maneuver company per TF internal to the division are possible given the force structure currently available in the division. An option espoused by COL William Grimsley, Commander of the 1st BCT 3rd ID(M), involves creation of a formation reminiscent of the old Combat Support Company. Under this proposal, the 4th maneuver company would be composed of an Infantry Platoon, the TF 120mm Mortar Platoon and all or a portion of the TF Scout Platoon and could be assigned economy of force type missions providing the TF commander some flexibility. [52] A second option involves combining the resources of three M6 Linebacker Batteries from division SHORAD Air Defense Battalion, the nine existing TF Scout Platoons and the three Brigade Reconnaissance Troops. Combining these elements into nine maneuver companies composed of an M6 Linebacker Platoon, a TF Scout Platoon and a smaller than current BRT Platoon would provide an additional maneuver option for TF and UA commanders.[53] Conversion of TF Scouts and the UA commanders BRT will stimulate serious discussion concerning how commanders at these echelon's will complete reconnaissance tasks required without this organic capability. However, some evidence exists indicating that the BRT's and TF Scouts were not fully utilized for reconnaissance during OIF due in large measure to their lack of survivability in M1025/26 or M1114 High Mobility Multipurpose Wheeled Vehicle's and relative lack of surveillance capability. [54] The addition of two to four LRAS3 (Long-Range Advanced Scout Surveillance System) to each Scout Platoon and BRT shortly before combat operations began did significantly improve the reconnaissance and targeting capability of these units.[55]

A third option would be to transition each Infantry and Armor Platoon from its current four M1 or M2's per platoon to three M1 or M2's per platoon. This would create a fourth platoon in each of the existing companies currently equipped with 14 M1 or M2's per company. These additional platoons could be grouped together at TF level to create a fourth maneuver company. The company headquarters and supporting CSS structure would have to be resourced from another source. A fourth option, currently not within the capability of the division to source, would require the Army to resource and add a Light Infantry Company to each of the eight maneuver TF's in the four UA's. This option would provide a force particularly adept in a Military Operations in Urban Terrain environment as experienced during OIF.[56] During a recent interview, MG Webster acknowledged " a realization that we've got to have more Infantry… Maybe another battalion's worth of Infantry or more per division."[57]

Regardless of which option discussed above, if any, is adopted, the Army must provide a fourth maneuver company for each of the two TF's in the UA. The reduction from nine to six maneuver companies that have no new weapons or system capabilities diminishes tactical maneuver potential in a HIC environment below a minimum level of acceptable capacity. This loss of capability increases the tactical risk that UA and TF commanders must accept to perform standard tactical missions to a potentially unmanageable and unacceptable level.

FIREPOWER

Perhaps the element of combat power most affected by the organizational change to a UA based division and due to change most radically in terms of how we think about combined arms fighting is firepower. A major premise of the division reorganization effort is that the UA and or division will have equal or greater access to joint fires than previously experienced.[58] The CSA has clearly outlined his vision of joint interdependence with the Army serving as a critical component of the joint team with some traditional Army requirements being met by our joint partners.[59] Recent reports indicate that the Army is prepared to eliminate or realign up to 40 Artillery Battalions from both the active and reserve components during force restructure efforts over the next few years.[60] Such a move would appear to support the intent to rely more heavily on joint fires to support newly developed modular forces.

The very successful performance of the joint fires team in providing timely and effective fires for maneuver forces during OIF has been well documented and with virtually no exceptions Close Air Support (CAS) was regarded as timely, effective and generally always available.[61] Only 4% of available sorties were lost or ineffective due to weather and 65% of those impacted by the weather occurred during a three-day span of incredibly adverse weather 26-28 March 2003.[62] The 3rd ID(M) OIF AAR commends the role of joint fires:

> Close Air Support (CAS) played a significant role in the success of Third Infantry Division (Mechanized) victory on the battlefield. CAS successes ranged the full spectrum of combat operations. It 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.[63]

In order to fully optimize the capability of joint fires the Army must initiate a multi-service effort to create, equip and train "Joint Fires Teams", combining the current capabilities of Air Force Enlisted Tactical Air Controllers (ETAC) and Army Fire Support Teams (FIST), capable of controlling all forms of joint air and indirect fires on the battlefield.[64] At a minimum these Joint Fires Teams should be resourced at company level, to include an allocation to CS and CSS

units located in depth on the non-contiguous battlefield, and ideally they should be authorized down to maneuver platoon level.[65] Assignment of Joint Fires Teams at one per maneuver company, to include the Engineer Company currently assigned as a fourth maneuver unit and the BRT, and an allocation of one per CS and CSS battalion will require a minimum of 55-60 teams. This is a significant increase over the current 30 M7 BFIST equipped company level fire support teams and 29 Air Force ETAC teams.[66] Principle to this effort will be Air Force relinquishment of their traditional sole jurisdiction as the only service arm capable of executing terminal control of Air Force CAS on the battlefield. LtGen Dan Leaf, who served as the senior Air Force officer in the Coalition Forces Land Component Command headquarters during OIF, recently commented not only the abundance of CAS during OIF but also the unique ability of airman to mitigate the risk of controlling CAS in close proximity to ground troops because they have a unique skill set and a singular focus.[67] It should be noted that the presence of additional Joint Fires Teams would not guarantee the availability of CAS. CAS is still more susceptible to the effects of the environment, such as at departure airfields than the all weather capability of artillery.[68]

The role of artillery during OIF was instrumental to the success our Army team enjoyed. The Army fired 14,457 155mm artillery rounds and 857 Multiple Launch Rocket System (MLRS) rockets during OIF[69] of which 13,941 155mm rounds and 794 MLRS rockets were fired by 3rd ID(M) artillery units.[70] Artillery units deployed during OIF fired an average of three times more artillery per tube than was fired during Operation Desert Storm.[71] A graphic depiction of artillery missions fired and CAS sorties utilized by 3rd ID(M) forces during four major battle periods during the division fights at Tallil, An Najaf, Karbala and Baghdad is depicted in Figure 4. Despite the regular availability of CAS, the division utilized significantly more artillery missions than CAS sorties during these high intensity fights.[72] The 3rd ID(M) OIF AAR characterized the importance of artillery to the division fight as follows:

> Field artillery was the primary system used in the counterfire effort and in support of the close fight. The division consistently found itself short on cannon artillery as it organized for combat in this extended battlespace. MLRS proved itself as the most lethal counterfire system, although the resulting UXO was a recurring issue…. Maneuver operations of this type require field artillery fires for the close and counterfire fights. A reinforcing field artillery brigade with at least one cannon and one rocket battalion along with its associated counterfire radars is critical to support division offensive operations.[73]
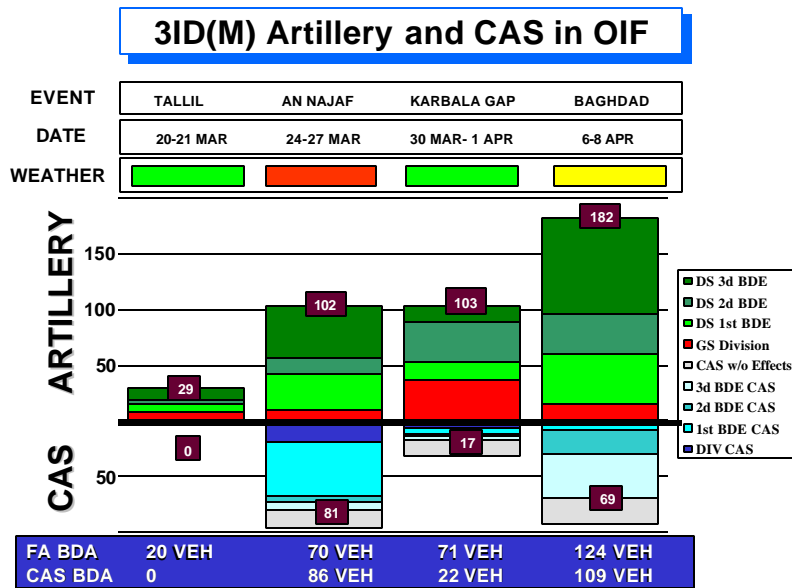
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3ID(M) Artillery and CAS in OIF

EVENT	TALLIL	AN NAJAF	KARBALA GAP	BAGHDAD
DATE	20-21 MAR	24-27 MAR	30 MAR- 1 APR	6-8 APR
WEATHER				

FA BDA	20 VEH	70 VEH	71 VEH	124 VEH
CAS BDA	0	86 VEH	22 VEH	109 VEH

FIGURE 4. ARTILLERY VS. CAS DURING KEY FIGHTS. [74]

The loss of one six-tube Paladin Battery per UA will result in a significantly reduced capability for the traditional fire support tasks: suppression, destruction, obscuration and counter-fire, normally provided to support the ground maneuver commander. Further, the reduction of 18 direct support artillery guns in the division will significantly restrict the ability of both the division and UA commander to weight the main effort with organic fire support assets.[75] The combination of 70% use of Precision Guided Munitions (PGM) employed via CAS, [76] advanced targeting capability, limited use of artillery PGM's such as the Sense and Destroy Armor (SADARM) round and the rapid "shoot and move" capability of the Paladin demonstrated during both OEF and OIF has significantly improved effectiveness of fires over previous conflicts.

The performance of the M7 Bradley Fire Support Team (BFIST) vehicle and the LRAS3 significantly improved both the timeliness and immediate, first round accuracy of indirect fires providing the ability to put rounds on target[77] in as little as one to two minutes.[78] The 3rd ID(M) employed SADARM for the first time in combat, firing 121 rounds [79] with great success achieving a kill rate of one armored vehicle kill for every two SADARM rounds fired.[80] The all weather, shoot from the march capability the Paladin demonstrated during OIF contributed to improved

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timeliness of fire missions to under two minutes.[81] The maneuver capability demonstrated by the Paladin during OIF coupled with advanced precision targeting seems to support the concept that smaller Paladin "maneuver" elements, perhaps platoon size, can provide timely and lethal fires dispersed on the battlefield inside of the tactical formations of Infantry and Armor formations in a manner similar to how Colonel Rich Longo envisioned utilization of the Crusader system.[82] Clearly, these capabilities show promise for increased future use and should be exploited to the maximum extent possible. The potential exists that increased development and production of artillery PGM's such as SADARM coupled with the full fielding of M7 BFIST and LRAS3 like targeting capabilities could continue to speed the transformation of conventional fire support from the traditional concept of massing of fires to a concept of dominance of fires.

However, the requirement for conventional fire support on a high intensity battlefield will continue to exist. A two battery, 12 tube DS Paladin battalion cannot fully execute the critical fire support tasks of suppression and obscuration as part of the doctrinal Suppress, Obscure, Secure, Reduce and Assault (SOSRA) methodology for deliberate attack breach operations.[83] Effective suppression requires dedication of one six gun battery to execute while the establishment of effective artillery obscuration via employment of smoke rounds requires two batteries to build and one battery to sustain after the smoke screen is established.[84] Under these conditions, the DS battalion would have no capability to execute fire missions on targets of opportunity or counterfire against enemy artillery and mortars supporting the enemy defense. Execution of all four of these fire support tasks in a simultaneous or near simultaneous period would require reinforcing artillery support from division and/or the employment of CAS to perform the suppression missions. During OIF, 3rd ID(M) artillery fired only 301 rounds of smoke as the division did not execute a significant number of tactical operations requiring the application of the SOSRA methodology.[85] On a battlefield such as Korea, this number would be expected to be significantly higher.

A 12 howitzer DS Battalion can't provide the doctrinally required minimal support to the UA for this probable HIC task. The UA must maintain a more capable DS Artillery Battalion to minimize the risk accepted. Additionally, new doctrine, geared towards more effective teaming of joint fires capabilities must be developed to mitigate the loss of UA indirect fire and maneuver capability in support of deliberate attack and breaching operations.

Further, a smaller, less capable DS battalion will restrict the number of Essential Fire Support Tasks (EFST) that a UA commander can develop and subsequently execute.[86]

A critically important EFST for a DS battalion on the non-contiguous HIC battlefield is counterfire, the immediate suppression of enemy mortar and short-range artillery. Larger

battlespace requirements as illustrated earlier during the discussion of the 5 April 2003 missions executed by the 2nd BCT, coupled with the potential for a high density of enemy indirect fire systems in a HIC environment such as Korea, place a premium on the ability of a DS battalion to execute these tasks. A modular and independently deployable UA requires a healthy counterfire capability. The addition of one AN/TPQ-36 or AN/TPQ-37 Firefinder radar as well as independent meteorological capability, perhaps in the form of a UA Target Acquisition Battery (TAB), would significantly improve execution of this critical task under the conditions envisioned for a deployed UA. [87] An additional Q-37, with its 50 kilometer range, would provide valuable long range surveillance for the UA but would also necessitate the increased role of CAS or joint fires in the counterfire fight to range long shooter enemy guns. To accomplish this, existing Air Force policy outlined in Special Instructions for pilots regarding the use of counterfire radars to target unobserved enemy in urban areas must be changed to permit the use of radar acquired 10 digit grids for targeting.[88]

The requirement for artillery in the close fight has not been negated. The teaming of capabilities: PGM's, advanced targeting, sufficient DS artillery and CAS delivered via Joint Fires Teams will provide the maneuver commander the tools to win in a HIC environment. William R. Hawkins made the case well for a combination of capabilities in a recent *Parameters* article when he stated, "Airpower and precision strike—along with tube and rocket artillery—are vital parts of the larger ground battle of annihilation, not a substitute for it."[89]

INFORMATION

The essence of the information element of combat power is the ability of the force to generate information about the enemy and itself and then utilize that information to make timely decisions that enhance leadership, maneuver and firepower. The intelligence and C2 BOS are the two primary tactical level functions represented as part of the information element. The heavy division reorganization has done little to improve each of these functions as few additional capabilities are immediately provided to either the division or UA commanders. Rather, assets are reorganized and allocated and as such there remains significant work to be done to improve capability based on an analysis of various OIF AAR's and interviews with OIF senior tactical commanders.

INTELLIGENCE

The fast paced, non-contiguous battlefield as experienced during major combat operations in Iraq places a premium on effective tactical level intelligence systems being present at the TF and UA level. The Headquarters Department of the Army (HQDA) OIF Study

Group illustrated this point stating that "tactical intelligence at Division and below lacked the fidelity and timeliness required to enable decisions—information gaps about the enemy were resolved through direct contact and armed reconnaissance."[90] Further, if the integration of joint fires is to be maximized in lieu of artillery delivered fires at the division and UA level, then ISR collection and dissemination means at the tactical level must be improved as they are directly related to the effectiveness of joint fires.[91]

Based on an assessment of the performance of intelligence systems during OIF, major adjustments and enhancements must be made to improve tactical level intelligence gathering, analysis and transmission capabilities. The HQDA study also recommended that the Army "provide Brigade and below with enhanced ISR means (UAV, HUMINT and SIGINT)."[92] The 3rd ID(M) OIF AAR included several major findings that were echoed during interviews with commanders.

> 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. Division organic collection systems must include a tactical unmanned aerial vehicle (UAV) that is dedicated and responsive to the Division Commander's 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 CI and HUMINT capability in the Army and at division level. Operational demands on tactical units require more robust organic capability for collection, for direction of operations, and for analysis.[93]

The 101st Airborne Division (Air Assault) OIF Lessons Learned report also recommends increased CI and HUMINT capability and improved intelligence system communications at both division and brigade level.[94]

The redesign of the division and creation of UA's with a DS MI Company assigned does not materially improve tactical intelligence capability. The Army should consider the following actions to improve intelligence systems in the division and UA's. First, field UAV's at the division, UA and TF level. The division should have a medium range UAV such as the Hunter (144 kilometer operating radius),[95] the UA a short range Shadow UAV (30 nautical mile operating radius [96] and currently planned for fielding to 3rd ID(M) in FY06[97]) and at the TF the Raven close range UAV (3 mile operating radius) which is currently employed by U.S. Special Forces units.[98] There appears to be an acknowledgement of the importance of UAV fielding as Department of Defense UAV programs are scheduled to receive $1.9 billion in FY05 funding, more than a $500 million increase over FY04.[99] Further, the Army recently awarded a $20.7 million contract to AeroVironment Corporation for delivery of 170 Raven UAV's by 31 December

2004.[100] Some of these should be fielded to the 3rd ID(M) to enhance intelligence collection and situational awareness and mitigate the risk assumed by a smaller maneuver force.

Second, the Army must enlarge CI and HUMINT capability at division and UA level to provide every TF level unit, throughout the battlespace, a Tactical HUMINT Team (THT). The reality of the non-contiguous battlefield reveals that HUMINT requirements are not restricted to front line units. Third, sufficient communications capability must be dedicated to intelligence nets and data transmission. Dedicated Tactical Satellite nets must be provided at UA level and above for intelligence as well as a means of disseminating and exchanging intelligence data. Fielding of additional, satellite based, TROJAN SPIRIT or TROJAN SPIRIT-Lite systems coupled with a global, satellite internet type system such as INMARSAT [101] will begin to alleviate this shortcoming. Fourth, the Army must provide permanently task organized access to national imagery as was made available to 3rd ID(M) during OIF via the attachment of the Quick Reaction System (QRS) at the division and UA level. The team should include National Imagery and Mapping Agency or similar expertise and separate reliable communications.[102]

Finally, the Army should explore new technologies such as the 81mm mortar based reconnaissance round being developed at the Georgia Tech Research Institute.[103] A team of researchers has successfully tested an existing 81mm mortar illumination round fitted with a miniature camera that transmits images back to a laptop computer at an interval of every 17 seconds while airborne for 90 seconds over a designated target area.[104] A reconnaissance mortar round could have tremendous practical application as a TF level UAV and it appears to be a realistic goal to acquire this type of device for a reasonable cost in the near term.

COMMAND AND CONTROL

Perhaps the functional area that demonstrated the most necessity for future growth based on OIF experiences, particularly if we are to leverage the capabilities that exist now in our current force and diminish the risks initially inherent in a smaller maneuver force, is C2. The Joint Operations Concepts describes an interdependent battlefield continuum that features decentralized execution achieved through decision superiority via a force that is enabled by a synchronized network.[105] Current systems in the Army Battle Command System, particularly at the tactical level, lack interoperability and simplicity[106] and the inability of the Mobile Subscriber Equipment network to meet operational requirements during OIF is well documented.[107] U.S. forces utilized 30 times more bandwidth during OIF than in Desert Storm [108] and OEF/OIF experiences indicate a growing trend of demand for even more bandwidth to support C2 and the concept of Battle Command on the Move (BCOTM) on the current and future battlefields. The

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reorganized division has not significantly changed its C2 architecture or capability. For the division and its independently deployable UA's to reach full modular potential, enhancements and changes in the area of C2 must be made.

The Army must fully resource the capability at division and UA to execute BCOTM: the capability to perform critical C4ISR functions from forward locations while engaging continuous offensive operations over extended distances. An excerpt from the 3rd ID(M) OIF AAR succinctly depicts the necessity of this capability:

> The division scheme of maneuver maintained a constant operational tempo and, when coupled with the double envelopment created by the MEF maneuver in the East, unhinged the enemy defense. During the conduct of this operation the division attacked over a distance of 350 km during the first 3 days and a total distance in excess of 600 km during the first 17 days. During one portion of the operation, the division battlespace extended over 250 km in depth. Expanded battlespace and extended LOC's resulted in many unique solutions across the battlefield operating systems. A command and control on-the-move capability was essential to the operation. FBCB2, wide band single channel TACSAT, and mobile command posts were the key enablers.[109]

The HQDA OIF Study Group also concluded that a combination of mobile command posts, in particular the M4 Command and Control Vehicle (C2V), coupled with satellite based, Blue Force Tracker (BFT) version of Force XXI Battle Command Brigade and Below (FBCB2) and wide-band satellite communications systems enabled successful BCOTM. [110] During OIF, 3rd ID(M) was allocated one wideband satellite net and conducted combat operations with only 49 Single Channel Tactical Satellite (SCTACSAT) radios[111], three C2V's and approximately 150 FBCB2-BFT[112] Unfortunately, the FBCB2-BFT systems are no longer in the division.

In order to enable both the reorganized division and the UA's to perform required C4ISR functions on a larger, non-contiguous and increasingly joint interdependent battlefield the Army must do three critical things. First, allocate a permanent FBCB2 like system capable of integrating critical maneuver, intelligence and CSS information down to platoon level for both maneuver, combat support and combat service support units.[113] Second, provide C2V's or a like vehicle platform for Division, UA and TF level Tactical and Assault Command Posts. The Army purchased a limited number of M4 C2V's during the late 1990's and further acquisition was cancelled as part of the FY01 budget process.[114] Recommend four at division level (DTAC and Assault CP); four for each of the five UA's (two for two each like CP's) and two per maneuver TF. Third, provide sufficient SCTACSAT radios and a wide band satellite net to enable operation of command, fires, intelligence and CSS nets at both division and UA level.[115] These capabilities are essential to provide a smaller ground maneuver force as envisioned in

the UA the capability to optimize its effects. Enhanced BCOTM is a significant force enhancement and risk reduction investment.

Additionally, the Army should authorize and source an increased number of Liaison Officers (LNO) at both division and UA level. Current authorizations of 1-3 LNO's per headquarters at division and brigade level are clearly inadequate to meet requirements[116] and OIF experiences indicate the Army must "resource robust liaison teams"[117] particularly if there is an intent to ensure a UA can deploy independently and nest into a non-habitual C2 environment.

The UA Commander should also be provided a permanently assigned staff capability for Army Airspace Command and Control (A2C2), Information Operations (IO), Psychological Operations (PYSOPS) as well as Special Operations. A Special Forces Liaison Team permanently task organized with each UA and the division headquarters is essential. OIF experience indicated that BCT and TF level units serve as the prime integrators of Special Forces capabilities in their battlespace.[118] The UA commander must be provided a field grade officer with a Civil Affairs background to serve as the UA S5. Multiple OIF AAR's clearly document the need for this type of special staff expertise.[119]

CONCLUSION: MODIFICATIONS REQUIRED TO OPTIMIZE THE DIVISION AND UNIT OF ACTION FOR HIGH INTENSITY CONFLICT

The significant reduction in UA maneuver capability; the loss of a combined arms maneuver TF and over 400 Infantry Soldiers coupled with the loss of organic fire support and the need for C4ISR enhancements in the UA creates a level of risk for tactical commanders that could inhibit or prevent mission accomplishment. In order to fully meet the General Schoomaker's guidance to optimize the division and UA's for HIC and enable the UA to deploy and operate independently, adjustments to the 3rd ID(M) reorganization plan of December 2003 are recommended. These modifications will reduce the risk associated with employing the new organization on a high intensity battlefield such as Korea. Major recommendations are summarized below:

- Add a 4th maneuver company per TF for a total of eight per UA. Retain the Combat Engineer Company in its primary role.
- Organize and employ Joint Fires Teams in support of maneuver companies and CS/CSS battalions.
- Retain more guns in the DS Artillery Battalion to enable execution of HIC requirements for a UA.

- Develop new doctrine to more effectively team joint fires and ground maneuver capabilities to mitigate the loss of UA indirect fire and maneuver capability, particularly in support of deliberate attack and breaching operations.

- Pursue expedited acquisition of new Artillery PGM's and field additional authorizations of proven munitions such as SADARM.

- Resource each UA with a TAB with 2 x Q-36/37 and meteorological section.

- Field UAV's at division, UA and TF level.

- Increase HUMINT capability at division and UA level to provide every TF level unit, throughout the battlespace, a THT.

- Provide permanently task organized access to national intelligence imagery via the attachment of the QRS at the division and UA level.

- Procure and employ a BCOTM system that includes three critical components: an FBCB2 like system capable of integrating critical maneuver, intelligence and CSS information; C2V's or a like vehicle platform at division, UA and TF level and sufficient SCTACSAT radios and a wide band satellite nets to enable operation of command, fires, intelligence and CSS nets at both division and UA level.

- Provide the UA Commander with a permanently assigned staff capability for A2C2, IO, PYSOPS and Special Operations.

EPILOGUE: ARMY DIRECTED MODIFICATIONS TO 3RD INFANTRY DIVISION (MECHANIZED) REORGANIZATION DESIGN

In February 2004 the Army directed that the 3rd ID(M) adopt the CSA approved Armored Unit of Action design developed by the Training and Doctrine Command Task Force Modularity. This UA model is depicted in Figure 5 and contains several significant changes from the previously approved reorganization COA for the division. The most significant changes involve the creation of a Reconnaissance Battalion for each UA, similar to the structure currently found in the Stryker Brigade Combat Teams; the addition of a fourth maneuver company to each Armor and Infantry TF; the assignment of an Engineer Company to each maneuver TF in lieu of the DS Combat Engineer Battalion currently assigned to each BCT; and the retention of 16 Paladins, organized into two batteries, in each DS Artillery, or "Strike" Battalion.
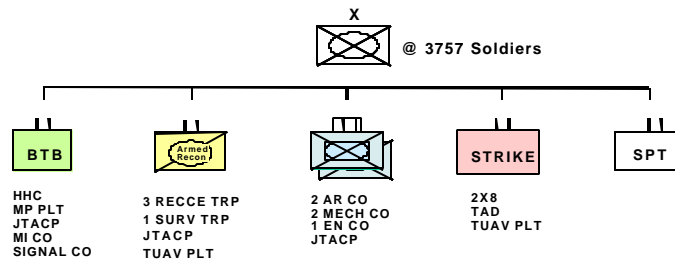
Armored Brigade Unit of Action

Recommended Design

@ 3757 Soldiers

BTB
HHC
MP PLT
JTACP
MI CO
SIGNAL CO

Armed Recon
3 RECCE TRP
1 SURV TRP
JTACP
TUAV PLT

2 AR CO
2 MECH CO
1 EN CO
JTACP

STRIKE
2X8
TAD
TUAV PLT

SPT

FIGURE 5. ARMORED BRIGADE UNIT OF ACTION.[120]

WORD COUNT=8423

ENDNOTES

[1] Kim Burger, "Gen Peter Schoomaker – Chief of Staff of the US Army," *Jane's Defence Weekly,* 1 October 2003; available from <http://www.us.army.mil/portal/jhtml/earlyBird/Sep2003/e20030929.htm>; Internet; accessed 29 September 2003.

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[5] A reading of the wide variety of articles and interviews with the CSA and other Army leaders as well as interviews conducted by the author with senior 3ID(M) leaders reveals this theme consistently repeated.

[6] Department of the Army, *FM 3.0 Operations*, (Washington D.C., Headquarters Department of the Army, June 2001), 4-3

[7] 3rd Infantry Division (Mechanized), "Reorganization," VTC briefing slides with scripted commentary, Ft. Stewart GA, 30 December 2003, slide 15.

[8] 3rd Infantry Division (Mechanized), "Reorganization," VTC briefing slides with scripted commentary, Ft. Stewart GA, 30 December 2003, slide 15.

[9] MG William G. Webster, Commanding General 3rd ID(M), interview by author, 30 December 2003, Ft. Stewart, GA.

[10] 3rd Infantry Division(Mechanized), "Division Reorganization," briefing slides with scripted commentary, Ft. Stewart GA, 5 November 2003, slide 22.

[11] 3rd Infantry Division(Mechanized), "Reorganization," VTC briefing slides with scripted commentary, Ft. Stewart GA, 30 December 2003, slide 56.

[12] Ibid., slide 48, 56.

[13] Ann Roosevelt, "Army Chief Approves Major Aviation Restructuring", *Defense Daily,* 30 January 2004; available from <http://ebird.afis.osd.mil/ebfiles/s20040131.htm>; Internet, accessed 31 January 2004. COL Curtis Potts <curtis.potts@us.army.mil>, Commander 4th Brigade 3rd ID(M), "Re: Interview Request," electronic mail message to LTC Peter Bayer <peter.bayer@us.army.mil>, 8 February 2004.

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[15] Aidan Foster-Carter, "North Korea: Avoiding Armageddon", *Jane's Defense Weekly,* 12 November 2003; available from <http://jdw.janes.com/subscribe/jdw/doc_view_print.jsp? K2Dockey=/content1/janesdata/ mags/jdw/history/jdw2003/jdw06318.htm>; Internet, accessed 1 December 2003.

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[20] Jane's World Armies 12, North Korea, 10 May 2002.

[21] Ibid.

[22] David J. Lynch, "DMZ is a Reminder of Stakes in Korea Crisis", *USA Today* , 23 December 2003, p. 11A.

[23] Department of the Army, *FM 3.0 Operations* , 4-3.

[24] Ibid., 4-4 to 4-11.

[25] Department of the Army, *FM 3-90 Tactics*, (Washington D.C., Headquarters Department of the Army, 4 July 2001), Chapter 2, section 2-12.

[26] Department of the Army, *FM 3.0 Operations*, 4-27.

[27] Dr. Stephen Biddle, "Afghanistan and the Future of Warfare: Implications for Army and Defense Policy", (Strategic Studies Institute, Carlisle PA., November 2002), viii; available from <http://www.carlisle.army.mil /ssi/pubs/2002/afghan/afghan.htm>; Internet, accessed 5 January 2004.

[28] U.S. Army HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slide 10; available from<https://call2.army.mil/oif/docs/briefings/ QuickLook_files.asp>; Internet, accessed 25 January 2004. Additionally, the 3 [rd] Infantry Division (Mechanized) and 101st Airborne Division (Air Assault) OIF AAR's also document this finding numerous times.

[29] COL William Grimsley, Infantry, Commander 1 [st] Brigade Combat Team, 3rd ID(M), interview by author, 30 December 2003, Ft. Stewart GA. and LTC J.R. Sanderson, Armor, Commander 2nd Battalion 69th Armor, interview by author 31 December 2003, Ft. Benning GA.

[30] COL Thomas Torrance <thomas.torrance@stewart.army.mil>, Commander 3rd ID(M) Division Artillery, "FW: Fire Support Redesign Answers," electronic mail message to LTC Peter Bayer <peter.bayer@us.army.mil>, 30 January 2004.

[31] COL William Grimsley interview by author, 30 December 2003. 3rd ID(M) converted to the Limited Conversion Division XXI in late FY99 and FY00 deactivating the fourth maneuver company in each Infantry and Armor battalion.

[32] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*, (Headquarters 3rd Infantry Division (Mechanized), Baghdad Iraq, 19 May 2003), v. The division captures maneuver performance in a positive light and does not specifically address the need for additional maneuver forces in the form of either more task forces or the addition of a fourth maneuver company to each Infantry and Armor battalion.

[33] COL William Grimsley, interview by author, 30 December 2003; COL David Perkins, Armor, former Commander 2nd Brigade Combat Team, 3rd ID(M), interview by author, 9 January 2004, Washington D.C.; COL Dan Allyn, Infantry, former Commander 3rd Brigade Combat Team, 3rd ID(M), interview by author, 9 January 2004, Washington D.C.; LTC Terry Ferrell, Armor, former Commander 3rd Squadron 7th Cavalry, interview by author, 27 January 2004, Carlisle PA. As noted in the 3rd ID(M) OIF AAR, 3rd ID(M) battlespace exceeded 16,000 square kilometers (230 KM in depth by 70 KM in width) during OIF.

[34] 3rd Infantry Division (Mechanized), "Division Tactical Operations Center (DTAC) Log of Events for 5 April 2003", Baghdad Iraq, 5 April 2003. 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*, xxxiii – xxxvii.

[35] 3rd Infantry Division (Mechanized), "Division Tactical Operations Center (DTAC) Log of Events for 5 April 2003", Baghdad Iraq, 5 April 2003. COL David Perkins interview by author.

[36] COL David Perkins and LTC Terry Ferrell interviews by author. Similar troop to task concerns and themes expressed by other commanders during interviews by author.

[37] COL David Perkins and COL Dan Allyn interviews by author.

[38] Ibid.

[39] Department of the Army, *FM 3-34.2, Combined Arms Breaching Operations*, (Washington D.C., Headquarters Department of the Army, 31 August 2000), Chapter 1, section 1-11.

[40] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*; v.

[41] BG Louis Weber, former Assistant Division Commander (Support), 3rd ID(M), interview by author, 9 January 2004, Washington D.C.. COL David Perkins interview by author.

[42] Ibid. The CSA has initiated a program to make every Soldier a rifleman first, increasing basic combat skills training focus in an effort to ensure that every Soldier in the Army focuses on warrior combat skills first and their technical skill requirement second.

[43] Ibid.

[44] MG Webster interview by author.

[45] COL John Peabody, Engineer, former Commander Engineer Brigade, 3rd ID(M), interview by author, 9 January 2004, Washington D.C.; COL Grimsley, LTC Sanderson and COL Perkins interviews by author.

[46] COL John Peabody, interview by author. 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*; 15-9.

[47] MG Webster, COL Grimsley, LTC Sanderson and LTC Ferrell interviews by author.

[48] 3rd Infantry Division (Mechanized), "Reorganization," VTC briefing slides with scripted commentary, slide 35.

[49] Douglas A. Macgregor, *Breaking the Phalanx: A New Design for Landpower in the 21st Century,* USAWC Fellowship Research Project (Carlisle Barracks: U.S. Army War College, 9 May 1996), 69.

[50] Douglas A. Macgregor, "XVIII Airborne Corps: Spearhead of Military Transformation", *Defense Horizons* 37 (January 2004): 2; available at <http://www.ndu.edu/inss/DefHor/DH37/DH37.htm>; Internet, accessed 5 February 2004.

[51] Paul E. Blackwell and Richard J. Dunn III, "Meeting the Operational Tempo Challenge: Increasing End Strength is Only Part of the Solution", *Army*, December 2003, 6.

[52] COL Grimsley interview by author.

[53] This idea stems from the authors own thinking and a similar idea expressed by LTC Ferrell during an interview by the author. An ADA-Scout combination for a fourth maneuver company would provide an interesting capability for a TF commander. The unit could perform both traditional reconnaissance tasks as well as Infantry tasks and would be equipped with an M2 Bradley Infantry Fighting Vehicle like platform in the M6 Linebacker. The ADA Soldiers could perform air defense task as a secondary mission for the TF if configured in such a way.

[54] 3rd Brigade, 3rd ID(M), *Operation Iraqi Freedom After Action Report*, (Headquarters 3rd Brigade, 3rd ID(M), Baghdad Iraq, 23 April 2003), 41 details the relative ineffectiveness of TF Scouts due to equipment platform inadequacies. LTC Ernest Marcone, <ernest.marcone@us.army.mil>, Commander 3-69 Armor, "RE: 3ID Redesign Research," electronic mail message to LTC Peter Bayer <peter.bayer@us.army.mil>, 29 January 2004 indicating he placed 50% of his TF Scout Platoon in M113's during OIF to improve survivability. Additionally, 3rd ID(M) several battalion and brigade level AAR's document the fact that both TF Scouts and BCT BRT's performed a wide variety of security missions in addition to reconnaissance during OIF combat operations.

[55] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*; 8-6. Additionally, the brigade level 3rd ID(M) OIF AAR's all mention the successful performance of LRAS3.

[56] Peter A. Wilson, John Gordon IV and David E. Johnson, "An Alternative Future Force: Building a Better Army", *Parameters VOL. XXXIII, NO.4,* (Winter 2003-2004): 26. The success

of Heavy/Light operations is also highlighted in the HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slides 10, 13 and 51.

[57] "Third Infantry Division Redesign May Require Thousands More Troops", *Inside the Pentagon,* (22 January 2004); available from <http://www.us.army.mil/portal/jhtml/earlybird/ Jan2004/ e20040122250927.html>; Internet; accessed 22 January 2004.

[58] "Army Eyes 'Joint Fire Control Team' to 'Enable' Lighter Ground Troops", *Inside the Pentagon,* 29 January 2004; available from <http://ebird.afis.osd.mil/ebfiles20040129.htm>, Internet; accessed 29 January 2004.

[59] General Peter Schoomaker, Remarks to the AUSA Eisenhower Luncheon, Washington D.C., 7 October 2003; available from <http://www.army.mil/leaders/CSA/speeches/ 20031007CSAluncheon.html>; Internet; accessed 8 October 2003.

[60] "Army Eyes 'Joint Fire Control Team' to 'Enable' Lighter Ground Troops", *Inside the Pentagon.*

[61] U.S. Army HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slides 46, 70.

[62] USCENTAF, "Operation Iraqi Freedom By the Numbers", in *U.S. Army War College Selected Readings, Academic Year 2004, Course 4 Implementing National Military Strategy, Volume II*, (Carlisle Barracks: U.S. Army War College, 2003), 15-74.

[63] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*; 14-1.

[64] "Army Eyes 'Joint Fire Control Team' to 'Enable' Lighter Ground Troops", *Inside the Pentagon.* This concept is also covered in the 3rd Infantry Division (Mechanized), "Reorganization," VTC briefing slides with scripted commentary slide 35. This requirement was mentioned frequently during interviews by author with MG Webster, COL Perkins, COL Grimsley, COL Allyn, LTC Ferrell and LTC Sanderson. LTC Doug Harding, Field Artillery, former commander 1st Battalion 10th Field Artillery, 3rd ID(M), telephonic interview by author, 20 January 2004.

[65] MG Webster, COL Perkins, COL Grimsley, COL Allyn, LTC Ferrell, LTC Sanderson, and LTC Harding interviews by author.

[66] 15th Air Support Operations Squadron, "Reorganization Briefing," briefing slides with scripted commentary, Ft. Stewart GA., February 2004, slide 4.

[67] "Army Eyes 'Joint Fire Control Team' to 'Enable' Lighter Ground Troops", *Inside the Pentagon.*

[68] COL Thomas Torrance <thomas.torrance@stewart.army.mil>, Commander 3rd ID(M) Division Artillery, "SRP," electronic mail message to LTC Peter Bayer <peter.bayer@us.army.mil>, 25 February 2004.

[69] U.S. Army HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slide 46.

[70] U.S. Army Field Artillery Center, "Operation Iraqi Freedom Lessons Learned", briefing slides with scripted commentary, slide 16; available from <https://call2.army.mil/oif/docs/briefings/OIFSG_FA_files.asp>; Internet: accessed 25 January 2004.

[71] U.S. Army HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slide 46.

[72] 3rd Infantry Division(Mechanized), "Mission Analysis for Division Reorganization," VTC briefing slides with scripted commentary, Ft. Stewart GA, 27 October 2003, slide 39.

[73] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*; vi.

[74] 3rd Infantry Division(Mechanized), "Mission Analysis for Division Reorganization," VTC briefing slides with scripted commentary, slide 39.

[75] LTC Harding telephonic interview by author. COL Torrance e-mail to author, 30 January 2004.

[76] Max Boot, "The New American Way of War", *Foreign Affairs*, (July/August 2003): 52.

[77] The tremendous impact of the BFIST and LRAS3 has been documented extensively. During interviews by author with LTC Harding, COL Grimsley, LTC Sanderson, COL Perkins, COL Allyn and in e-mail from COL Torrance all commented on one or both of these systems and their positive impact. Additionally, the 3rd ID(M) OIF AAR and 3rd ID(M) Brigade and Battalion level AAR's provide additional positive feedback on their contributions on the battlefield.

[78] U.S. Army HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slide 46 cites a delivery time of one minute. U.S. Army Infantry School, "Fires in the Close Fight: OIF Lessons Learned", briefing slides with scripted commentary, Ft. Benning GA, prepared by 3rd BCT, 3rd ID(M), slide12; available from <https://call2.army.mil/oif/docs/briefings/InfConf/Fires_Close_Fight_files/frame.asp>; Internet, accessed 25 January 2004, cites a delivery time of under two minutes.

[79] U.S. Army Field Artillery Center, "Operation Iraqi Freedom Lessons Learned", briefings slides with scripted commentary, slide 16.

[80] LTC Harding interview by author. 1st Battalion 10th Field Artillery, *Operation Iraqi Freedom After Action Review*, (Headquarters, 1-10 FA, Baghdad Iraq, 22 April 2003),17.

[81] U.S. Army Infantry School, "Fires in the Close Fight: OIF Lessons Learned", briefing slides with scripted commentary, slide 12.

[82] Colonel Rich C. Longo, *Direct and Indirect Fires in the Twenty-First Century*, Strategy Research Project (Carlisle Barracks: U.S. Army War College, 7 April 2003), 4.

[83] Department of the Army, *FM 3-34.2, Combined Arms Breaching Operations*, Chapter 1, section 1-11.

[84] LTC Harding interview by author and 30 January 2004 e-mail from COL Torrance to author.

[85] U.S. Army Field Artillery Center, "Operation Iraqi Freedom Lessons Learned", briefings slides with scripted commentary, slide 16.

[86] LTC Harding interview by author.

[87] LTC Harding and COL Allyn interviews by author and 30 January 2004 e-mail from COL Torrance to author.

[88] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*, 4-3.

[89] William R. Hawkins, "Iraq: Heavy Forces and Decisive Warfare", *Parameters VOL XXXIII NO. 3*, (Autumn 2003), 64.

[90] U.S. Army HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slide 50.

[91] COL Allyn interview by author.

[92] U.S. Army HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slide 58.

[93] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*, 9-2

[94] 101st Airborne Division (Air Assault), *Operation Iraqi Freedom Lessons Learned Part I*, (Headquarters, 101st Airborne Division (Air Assault), Mosul Iraq, 30 May 2003), 5-8 and 5-18.

[95] Elizabeth Bone and Christopher Bolcom, "Unmanned Aerial Vehicles: Background and Issues for Congress", (Washington D.C., Congressional Research Service, The Library of Congress, 25 April 2003), 28; available from <http://www.fas.org/irp/crs/RL31872.pdf>; Internet; accessed 25 January 2004.

[96] Ibid., 31.

[97] MAJ Shawn Weed, <shawn.weed@us.army.mil> , "RE: MI Architecture Questions", electronic mail message to LTC Peter Bayer <peter.bayer@us.army.mil>, 17 February 2004.

[98] Elizabeth Bone and Christopher Bolcom, "Unmanned Aerial Vehicles: Background and Issues for Congress", 32.

[99] Tony Capaccio, "Northrop, Boeing Unmanned Aircraft Programs Boosted", *Bloomberg.com* , 2 February 2004; available from <http://ebird.afis.osd.mil/ebfiles/s20040203.htm>; Internet; accessed 3 February 2004.

[100] "Procurement Contract for Raven UAV", *uavworld.com* , 8 January 2004; available from <http://www.uavworld.com/_disc1/000000f9.htm>; Internet; accessed 29 January 2004.

[101] Inmarsat was the world's first global mobile satellite communications operator offering a mature range of modern communications services to maritime, land-mobile, aeronautical and other users supporting links for phone, fax and data communications at up to 64kbit/s to more than 250,000 ship, vehicle, aircraft and portable terminals. More information is available at <http://www.inmarsat.org>.

[102] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*, 9-8

[103] Ron Martz, "Georgia Tech Team's Artillery Tracks the Enemy", *Atlanta Journal-Constitution,*18 January 2004; available from <http://ebird.afis.osd.mil/ebfiles/ s20040120250005.html>; Internet; accessed 28 January 2004.

[104] Ibid.

[105] Joint Chiefs Of Staff, *Joint Operations Concepts,* 9, 15.

[106] Christopher J. Toomey, "Army Digitization: Making it Ready for Prime Time", *Parameters VOL. XXXIII, NO. 4,* (Autumn 2003): 48.

[107] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*, 17-1.

[108] Max Boot, 58.

[109] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*, v-vi

[110] HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slides 6, 32 and 73.

[111] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*, 17-16

[112] Ibid., 8-2.

[113] Ibid., 1-5, 17-3 and interviews by author with COL Grimsley, COL Perkins, COL Allyn, COL Peabody, LTC Sanderson and LTC Ferrell related the value and requirement for an FBCB2 like system.

[114] "M4 Command and Control Vehicle (C2V)", *Federation of American Scientists Military Analysis Network*; available at <http://www.fas.org/man/dod-101/sys/land/c2v.htm>; Internet; accessed 8 February 2004.

[115] It should be noted that these recommendations are contained in similar form in the 3rd ID(M) OIF AAR, the U.S. Army HQDA OIF Study Group Brief and were echoed strongly during every interview conducted with current and former 3rd ID(M) BCT and TF level commanders. This requirement is clearly viewed as essential to enabling the UA and division to meet mission requirements.

[116] Assessment based on author's personal experience as the G3 of the 3rd ID(M) during OIF. Division staff authorizations for LNO's did not nearly meet eventual demand of over 20 LNO's sent by the division to higher, adjacent and supporting organizations. Division headquarters was required to task subordinate units for requirements and in some cases send

staff officers authorized on the 3rd ID(M) staff to work in higher headquarters to meet directed LNO requirements.

[117] U.S. Army HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slide 6.

[118] 3rd Infantry Division (Mechanized), *Operation Iraqi Freedom After Action Review*, 11-7. 2nd Brigade Combat Team, 3rd ID(M), *Operation Iraqi Freedom After Action Review*, (Headquarters, 2nd BCT, 3rd ID(M), Baghdad Iraq, 24 April 2003), 2.

[119] U.S. Army HQDA Operation Iraqi Freedom Study Group, "U.S. Army Operation Iraqi Freedom Observations Quick Look" briefing slides with scripted commentary, slide 51.

[120] Headquarters TRADOC, "Task Force Modularity", briefing slides with scripted commentary, 5 February 2004, slide 5.

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