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Enhanced Company Operations in High Intensity Combat: Can Preparations for Irregular War Enhance Capabilities for High Intensity Combat?

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Executive Summary

Title: Enhanced Company Operations in High Intensity Combat: Can Preparations for Irregular War Enhance Capabilities for High Intensity Combat?

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Thesis: The ECO concept will not only provide the Marine Corps with the ability to better address irregular threats, but will also provide capabilities that will enhance its ability to fight in high intensity conflicts.

Discussion: The United States has recently demonstrated its ability to dominate the conventional militaries of adversary nation states. This in addition to the prevalence of failing nation state governments, the rise of non-state actors, and their relative success in Iraq and Afghanistan, suggest that future conflicts are most likely to be irregular conflicts. However, while facing an irregular threat is most likely, the threat of facing conventional militaries is arguably more dangerous. Therefore, Marine Corps and Department of Defense leaders are faced with the dilemma of better preparing the force for irregular threats without degrading capabilities in conventional warfare. Counterinsurgency operations have shown the necessity of distributing the force in support of "clear and hold" tactics. Enhanced Company Operations facilitates distributing the force by providing enhanced command and control, fire support, and logistics capabilities to the rifle company. These capabilities effectively enable the rifle company to replace the infantry battalion as the smallest unit capable of independent operations. However, as history indicates high intensity engagements can take place in the midst of low intensity operations. While the ECO concept is of obvious utility in irregular warfare, Operation AL FAJR, the November 2004 battle of Al Fallujah, suggests that the capabilities afforded by the concept also bring greater lethality and survivability to our forces engaged in high intensity combat. The ad-hoc communications and command and control assets used to great effect by units in the operation formed the basis of the current ECO table of equipment, and facilitated the devastating use of precision guided munitions to destroy enemy forces.

Conclusion: Enhanced Company Operations will improve effectiveness in counterinsurgency and proactive engagement campaigns by facilitating distribution of more capable forces with dramatically reduced risk, and at the same time these capabilities provide increased lethality and survivability in the most intense combat operations, as evidenced by Operation AL FAJR.

Many have long predicted that due to the United States' overwhelming conventional military might and technological superiority, future adversaries are likely to choose asymmetrical approaches to fight the United States, particularly given insurgents' recent relative success in Iraq and Afghanistan. Leaders at the Department of Defense and throughout all branches of the armed forces, including the Commandant of the Marine Corps and his forward thinkers, have begun to consider the best ways to equip, train, and reorganize the force to face likely future threats while preserving the ability to fight and win high intensity conflicts. "The Long War: A Marine Corps Operational Employment Concept To Meet An Uncertain Security Environment" states, "The re-emergence of this pronounced, irregular threat heralds an additional challenge and requires the Marine Corps to make adjustments to the way the Marine Corps organizes its forces to fight our Nation's foes."¹

One of the Marine Corps' current initiatives is the Enhanced Company Operations (ECO) concept, which is designed to provide the commander with expanded capabilities to better face these future threats. "A Concept for Enhanced Company Operations" links this concept with the future threat environment by stating, "The *Long War* describes a distributed environment where forward presence and shaping activities seek to preclude crisis; yet, it also describes highly capable expeditionary forces with the capacity to conduct very efficient and traditional kinetic operations when required."² **The ECO concept will not only provide the Marine Corps with the ability to better address irregular threats, but will also provide capabilities that will enhance its ability to fight in high intensity conflicts such as Operation AL FAJR.**

Success in counterinsurgency warfare is heavily dependent upon "boots on the deck" in order to control borders, separate warring ethnic or religious factions, provide stability and security, protect the populace and indigenous government, train indigenous security forces,

collect intelligence, and conduct other vital tasks. These requirements necessitate not only large occupation forces but also coverage of vast areas. In recent counterinsurgency operations, living and operating from fortress like bases has proven counterproductive, while "clear and hold" tactics have produced success, a major theme of MCWP 3-33.5 *Counterinsurgency*.³

Similarly, the Security Cooperation Marine Air Ground Task Forces (SCMAGTF) described in *The Long War*, designed to combat instability in fragile environments proactively, will require greater unit division and separation than traditional Marine Expeditionary Units (MEU) have employed. In short, smaller units will be required to operate farther from higher headquarters, their adjacent units, and supporting organizations in order to meet the future challenges of irregular warfare. One method cited in the recently released publication, *The Long War*, to address this need is the Distributed Operations (DO) concept, the precursor to ECO.

"Distributed Operations is a technique applied to an appropriate situation wherein units are separated beyond the limits of mutual support. When facing irregular forces or forces operating in complex terrain, distributed operations may allow the commander to expand his area of influence. During security cooperation, shaping, and deterrence, the decentralized action enabled by distributed operations will permit wider, more diverse application of power and influence. This same capability afforded through distributed operations can be leveraged to enable rapid re-aggregation or reinforcement where military power projection must be quickly applied."⁴

The last portion of this statement will be examined here; "How will this force, optimized for irregular warfare, perform in high-intensity urban conflicts such as Operation AL FAJR?"

On 25 April 2005, General Michael W. Hagee, 33rd Commandant of the Marine Corps, officially introduced the DO concept designed to address "critical capability gaps of the combatant commanders, particularly gaps in actionable intelligence and the ability to apply tailored combat power...."⁵ The concept was intended to "create an advantage over an adversary through the deliberate use of separation and coordinated, interdependent, tactical actions enabled by increased access to functional support, as well as by enhanced combat capabilities at the small-unit level."⁶

The DO concept is certainly not a new one as many nations have successfully employed widely dispersed forces in the past. A few notable examples include the Finns against the Soviet Union in 1939-1940, the British and Indian "Chindits" against the Japanese during World War II, and the British against the Argentine army in the Falklands in 1982. The Marine Corps' use of the Combined Action Program in Vietnam is an example of DO applied in the context of counterinsurgency. Additionally, the concept was tested by the Marine Corps Warfighting Lab (MCWL) in experiments dubbed Sea Dragon and Hunter Warrior in the late 1990's. The concept was designed to exploit cutting edge technology and superbly trained lighter and more agile forces by employing them non-contiguously. These forces were equipped with sophisticated equipment to disrupt and destroy enemy forces behind enemy lines, as well as infiltrate and defeat enemy denial and anti-access capabilities as a part of Ship To Objective Maneuver (STOM) and Operational Maneuver From The Sea (OMFTS).

The DO concept was met with resistance by many due to concerns over the vulnerability of small units operating far from supporting units and higher headquarters and the necessary equipment development and fielding lagged far behind. However, through the conduct of counterinsurgency operations in Iraq and Afghanistan, leaders began to understand the need for counterinsurgency forces to deny enemy sanctuary through "clear and hold" tactics and then embrace and protect the populace in order to build legitimacy, and gain intelligence. This has necessitated small units vulnerably living and operating further from supporting organizations and higher headquarters.

The tactical application of the Marine Corps' 2005 DO concept introduced by General Hagee similarly entailed employment of disaggregated or non-contiguous companies, platoons, or squads operating throughout the breadth and depth of the battlespace in order to produce

increased awareness of the enemy situation and disrupt or defeat him with long range precision fires, with reduced exposure. These small units, dispersed beyond the range of mutual support from adjacent units, and beyond the normal range of organic or parent unit fire support, will depend heavily on their link to a command and control network capable of providing intelligence, surveillance, and reconnaissance (ISR), as well as fires and logistic support from new or revised platforms or platforms previously available only to larger units. While DO relies heavily upon the small unit being networked to its lifeline of fires and logistics, it differs sharply from the concept of Network Centric Warfare (NCW) in that it calls for decentralized operations. NCW employs forces and sensors distributed throughout the battlespace, but involves a central commander to receive inputs, make centralized decisions, and fight remotely. The Marine Corps' DO concept takes the opposite approach. The small infantry units are the "prime discriminators, deciders and actors."⁷

The MCWL conducted a series of experimental exercises designed to identify the requirements for implementation of the DO concept. These experimental exercises identified the need for long-range communications devices, target acquisition tools, long-range precision fires platforms, enhanced logistics delivery, and a substantial increase in training. To meet these requirements, collaborative efforts between Marine Corps Combat Development Command (MCCDC), Marine Corps Training and Education Command (TECOM), Marine Corps Systems Command (SYSCOM), and the Defense Advanced Research Projects Agency (DARPA) Advanced Technology Office were undertaken.⁸

One of the heavily contested aspects of the DO concept was the notion that the squad leader would coordinate, deconflict, and control the airstrikes and indirect fire attacks cornerstone to the concept. This idea is plagued with several problems such as: how to provide

the tactical air controller and forward observer training, keeping squad leaders in their operational units long enough to receive this training and develop the necessary technical proficiency, and the degradation of the squad leader's ability to tactically lead his squad while conducting the air and/or indirect fire strikes. Adding a Marine, other than the squad leader, with these specific capabilities to the rifle squad table of organization was deemed unsupportable from a manpower perspective.⁹

While these obstacles have prevented an across-the-board uniform skill set, the capability exists on a limited scale that is personality and situationally dependent. Other obstacles to implementation include risk aversion and the reluctance by some to delegate strike approval, to the small unit level, particularly in the politically sensitive environment associated with stability or counterinsurgency operations where this authority typically resides with battalion commanders.

Despite these obstacles, experimentation with the DO concept has produced tremendous results and significantly increased capabilities. Perhaps the biggest contributions of the program have been in training. The DO Implementation Working Group (DOIWG) developed a revised and standardized pre-deployment training plan that is synchronized with battalion manning. This program, referred to as the Infantry Battalion Enhancement Period Program (IBEPP) has increased the availability of school seats and front-loaded and consolidated the formal training of the battalion's small unit leadership early in the battalion's training cycle. This improvement went a long way to address a previously mentioned obstacle to implementation, which is the level of proficiency of small unit leaders in fundamental skills such as land navigation, call-for-fire, and communications.¹⁰

Another key contribution of the program is the DO gear list, which resulted in \$19 million dollars worth of equipment being added to each infantry battalion's table of equipment.¹¹ The DO gear list is flexible and as new equipment is developed and successfully tested it replaces less capable gear on the list. This equipment consists mostly of tactical communications equipment and vehicles, that in the past infantry battalions were "falling in on" upon arrival in theater.¹² The significance of this communications gear specifically will be examined later in the context of the November 2004 battle of Al Fallujah.

This step went a long way in addressing what many considered the limiting factor in distributing forces, after all, aviation and rocket artillery systems are already in place that can provide long-range precision fires, and logistics delivery and support can be provided with aviation platforms, until experimental unmanned remote systems are available. This program was also enthusiastically embraced by DARPA as well as the Office of Naval Research (ONR), both of which are investing heavily in the scientific and technological advances that will enhance the effectiveness and capabilities of DO.

However, despite these developments, on 13 May 2008, Brigadier General Andrew O'Donnell, the director of capabilities development at MCCDC, speaking at the SYSCOM annual brief to industry said, "The concept of distributed operations in the Marine Corps is dead." He went on to explain that the Marine Corps has adopted instead the concept of ECO, which focuses on enabling the rifle company to operate independently. As further explanation General O'Donnell stated that the Commandant was "not comfortable" with "six-man teams going out on their own."¹³

This explanation is questionable since it discounts the discretion of the commander on the ground to determine what level of distribution is appropriate in a given tactical scenario. The

concept was designed to offer a capability to distribute companies, platoons, and squads as the scenario dictated. Another likely factor was the full-implementation price tag associated with equipping squads with sophisticated targeting assets and other-the-horizon communications assets, as well as fielding new fires and logistics delivery platforms necessary to support such operations. Colonel Vincent J. Goulding, Jr., USMC(Ret), Director of the Experiment Division at MCWL, called the shift from DO to ECO, "a logical progression to capability development," that stemmed from the June 2007 Tactical Capabilities for Irregular Warfare Conference.¹⁴

The Commandant recently stated, "Conventional wisdom tells us that the battalion is the smallest formation capable of sustained independent operations; current operations tell us it is the company."¹⁵ ECO will provide the company with the necessary training, assets, and personnel to allow it to do so. ECO facilitates the necessary battlefield distribution; it simply focuses on the rifle company, while DO started with preparing infantry squads under the premise that good squads make good platoons, which make good companies. Despite the apparent wisdom of this approach however, independent rifle companies cannot effectively command and control distributed squads and platoons without enhancements to their capabilities in this area. Distributed platoons or squads with inadequate command and control would pose a significant liability.

The June 2007 Irregular Warfare Conference, and specifically the contingent from MCWL, examined the best practices and tactics, techniques, and procedures (TTPs) of the numerous companies throughout Iraq and Afghanistan that have been conducting company-level distributed operations since the beginning of phase IV operations in both theaters. The two major needs identified to support such operations were the creation of a company-level intelligence cell and a company-level operations center.¹⁶ Companies far-removed from their

battalion headquarters have long been filling these requirements through ad-hoc measures as MCWL discovered.

Counterinsurgency operations have necessitated the need for greater battlefield distribution and rifle companies have been assigned vast zones that are beyond the range of battalion fires and often traditional communications ranges. As a result companies have developed more and more robust make-shift command and control capabilities to monitor and support their sub-units. Similarly, in order to best collect and synthesize the detailed level of intelligence required for successful counterinsurgency operations, rifle companies have built ad-hoc intelligence cells that have a more refined focus. Therefore, MCWL, as a first order of business for implementing ECO, set about creating a formal manning structure as well as additions to the company table of equipment, to facilitate both of these initiatives and were guided by the ad-hoc models of numerous rifle companies in Iraq and Afghanistan.

Notwithstanding General O'Donnell's comments referring to DO as "dead", the Marine Corps' adoption of the ECO concept does not preclude the conduct or ongoing facilitation of DO. ECO simply recognizes that company-level capabilities are paramount to distribution of its sub-units. SYSCOM is still working to field the DO gear list, a subset of which is called the Marine Expeditionary Rifle Squad and includes long-range communication assets.¹⁷ Similarly, the recently released *Vision & Strategy 2025*, states that, "The Marine Corps will integrate C2 and ISR capabilities down to the squad level."¹⁸

The ability to distribute forces has clearly been necessitated by the realities of counterinsurgency operations. Similarly, this capability will significantly broaden the impact of future SCMAGTF operations. As the *Long War* states, "Although we will not compromise our ability to fight and win our Nation's battles, we must focus training to better address the complex

challenges we face now.”¹⁹ Debate continues over how to prepare a force better suited for irregular war without compromising or degrading dominance in conventional war. Increases in global urbanization, and predictions that over 60 percent of the world’s population will be heavily concentrated in littoral urban areas by 2025 necessitate consideration of fighting in these environments.²⁰ Additionally, the USMC Fleet Marine Force Manual (FMFM) 1-2 *The Role of the Marine Corps in the National Defense*, states, “The increasingly probably terrain for political reinforcement tasks under unanticipated, time-sensitive circumstances is urban.”²¹ In the midst of either security cooperation operations or counterinsurgency operations the need may arise for high intensity urban combat as demonstrated by operations in An Najaf and Al Fallujah in 2004, and most recently in Sadr City in 2008. Therefore, prudence dictates that any efforts to reshape the force for irregular war must also take into account the likelihood of fighting in complex urban terrain.

Operation PHANTOM FURY/AL FAJR – The November 2004 Fallujah Battle

Throughout much of 2003 the situation on the ground in Iraq grew worse and an insurgency grew; stability operations became counterinsurgency operations. Arguably the most intense sight of the associated violence was in the Al Anbar province and specifically the city of Al Fallujah. Located approximately 45 miles west of Baghdad, the city lies on the east shore of the Euphrates river. Also called the “City of Mosques” the city is known for its over 200 mosques. The city is also known for its reputation for unrest – even during the oppressive Saddam Hussein regime. In 2003, the 3 kilometer by 4 kilometer city was home to an estimated population of 425,800. However, by mid 2004 much of the population had left due to the heavy presence of insurgents and the violence they brought, and the population was estimated to be 239,000.²²

In April 2003 an Army patrol from the 82d Airborne Division fired on and killed an estimated 17 protestors whom they believed had fired on them.²³ Attacks against the Army and other coalition forces continued to escalate and in March of 2004 four Blackwater contractors were murdered and mutilated in the city. In April of 2004, the 1st Marine Expeditionary Force (I MEF) led by Lieutenant General James T. Conway and 1st Marine Division led by Major General James Mattis conducted Operation VIGILANT RESOLVE that was an indecisive operation that resulted in a political settlement to turn over the city to an Iraqi security force. The arrangement proved unacceptable as the city increasingly became an insurgent sanctuary.²⁴ The situation was clearly undermining the legitimacy of the coalition and seriously threatened the success of the counterinsurgency.

On the evening of 7 November 2004, the 1st Marine Division under Major General Richard Natonski began Operation PHANTOM FURY/AL FAJR. The Division was comprised of two Regimental Combat Teams, with two Marine battalions and one Army battalion each. Four additional battalions were used on the periphery to isolate the city.²⁵ The tactical task from the Division's mission statement was to, "attack to destroy anti-Iraqi forces." General Natonski's intent had three elements: 1) Eliminate insurgent sanctuary, 2) Set the conditions for local control, and 3) Support MNF-I effort to secure approaches to Baghdad. Similarly, his endstate had three components: 1) Insurgents in Fallujah destroyed/sanctuary eliminated, 2) Iraqi security forces/Iraqi interim government in control of Fallujah, and 3) Division prepared for follow-on operations.²⁶

Hours of discussion during the 1st Marine Regiment's operational planning sessions focused on the tactical task to destroy the enemy and how this was to be translated into action. The consensus was that given the nature of the enemy and his proclivity to fade away and later

reconsolidate, coupled with the collateral task to eliminate weapons caches, that each structure would have to be searched.²⁷ This requirement precluded employing forces in a distributed manner during the assault. The sheer size of the city and the density of its structures dictated a large and compressed force given its mission.

The publication, *A Concept for Enhanced Company Operations*, describes the role of ECO in the context of such an operation by stating, "*The Long War* describes a distributed environment where forward presence and shaping activities seek to preclude crisis; yet, it also describes highly capable expeditionary forces with the capacity to conduct very efficient and traditional kinetic operations when required."²⁸ This is precisely what happened in Operation AL FAJR; rifle companies operating in distributed fashion came from throughout the I MEF battlespace to consolidate for the assault. Therefore, analysis of this operation can provide an indication of the capability of units equipped for ECO to fight in high-intensity urban combat.

The concept was not intended to produce tactics, rather it was intended to produce capabilities for more employment options as the tactical situation dictates. However, equipment and technology produce new capabilities which inevitably create refined or new tactics, just as the advent of the machine gun dramatically altered infantry tactics. Likewise, capabilities that stem from this concept have driven the development of tactics for urban combat.

The terrain in Al Fallujah was quite imposing due to its densely packed concrete structures estimated to number as high as 50,000, many of which featured high concrete perimeter walls as well. With the exception of the two major thoroughfares the streets were extremely narrow with buildings set right at their edge. Additionally, the space between buildings was so small that these areas were passable only on foot and in single file. Finally, nearly all buildings were multi-story and had interior access to their roof tops which also had

concrete perimeter walls. The city presented the ideal terrain to negate many of the technological advantages that the United States' forces had.

Estimates placed enemy numbers at somewhere over 2,000 strong.²⁹ The enemy was armed with AK-47s, light and medium machine guns, sniper rifles, hand grenades, and rocket propelled grenades. They also had small numbers of heavy machine guns, anti-aircraft guns, and surface to air missiles, and late model warheads for their rocket propelled machine guns, which posed a significant threat even to tanks. Additionally, many of the enemy had push-to-talk radios, body armor and night vision devices. The enemy made extensive use obstacles, land mines, and improvised explosive devices along canalized routes. Similarly, structures often had interior fortifications of sandbags, and doorways were covered by concealed firing positions or booby traps.³⁰

The enemy in Fallujah consisted of both Iraqis and foreign fighters with diverse motivations. Some were former regime loyalists, while others were hard core jihadists. Some were martyrs who sought to pull American forces inside of buildings for close-range engagements. Others were guerillas who chose hit and run tactics and fired upon American forces after carefully planning egress routes.

The enemy inside the city rarely attacked armored vehicles, as evidenced by 2/7 Cavalry's initial penetration attack where no enemy resistance was encountered. On the very few occasions that the enemy did attack armored vehicles it was from well planned ambush positions that exploited natural channeling features augmented by surface laid mines. These anti-armor ambushes consisted of close-range surprise rocket propelled grenade fire from multiple angles and were effective at temporarily disabling tanks. Most frequently the enemy fired from hidden positions to draw Marines and soldiers inside of the suspected structures, or

simply moved away from advancing forces and latter slipped back in from exposed flanks or rear areas. This later tactic prompted numerous efforts to “back clear” previously cleared areas and necessitated detailed clearing efforts and entry of each structure.³¹ Most often the enemy fought in 3-4 man groups but on occasions fought in platoon-size elements.

While techniques and procedures differed slightly from infantry battalion to infantry battalion, the assault through the city was a linear operation. This approach was not only necessary to clear the vast numbers of structures, but also served to create the simplest geometry for aviation, direct and indirect fire support. Additionally this type of assault gave the enemy the least opportunity to slip behind or around the advancing force. Encounters with enemy fighters inside the confines of a house greatly negated the fire and technological superiority of Marines and soldiers. Therefore, ideally units would make every effort to withdraw from the structure, isolate it, and then call for a precision strike with aviation assets. If forces took casualties in the initial encounter and were unable to withdraw, the enemy had to be eliminated in room-to-room combat with small arms in order to facilitate the evacuation of the casualty. Less often the enemy engaged Marines and soldiers from inside a structure before the Marines or soldiers had made entry. In these or any other circumstances where the enemy’s presence in a structure was known, attack aviation assets could be employed.

Playing into the enemy’s hands and engaging in room-to-room combat was to be avoided. Other assets available to finish such engagements were tank main guns, TOW and Javelin missiles, and armored bull dozers. The 60 and 81mm mortars lacked the ability to penetrate concrete structures and artillery lacked the necessary precision to hit a single home, or much less a specific room, within a reasonable amount of time. Due to the minimal coordination required and the quicker response time, tank main guns and missiles were the preferred weapon for this

work. However, aviation fires, specifically the 500-pound GBU-38 Joint Direct Attack Munition (JDAM), which made its urban combat debut in Operation AL FAJR, were used extensively as well.³²

The main effort infantry battalion, 3d Battalion, 1st Marines, conducted 276 airstrikes during the first ten days of the operation. Of those airstrikes, 265 were within danger close parameters, and no friendly casualties were sustained as a result of these airstrikes.³³ The JDAM proved to be an incredibly useful tool due to its precision destruction and minimal collateral damage and threat to nearby friendly forces.

While "mopping up" operations continued for weeks to rid the city of caches and remaining individual fighters still hiding in the city, despite grim predictions, the enemy was defeated and the city clear within 10 days. An estimated 1,200 enemy fighters were killed. U.S. forces sustained 51 Marines and soldiers killed and 425 wounded.³⁴ Operation AL FAJR involved the Marine Corps' most intense combat since Hue City in Vietnam and many predicted that it would be just as costly in terms of American lives. However, with few exceptions the operation was considered a remarkable tactical success. In short, the American forces' tactic of avoiding room-to-room combat to the greatest extent possible, opting rather to destroy enemy forces inside with precision aviation ordnance or precision direct fires, saved the lives of countless Marines and soldiers and contributed immeasurably to the success of the operation.

Another element paramount to the success of the operation was the extensive and innovative use of unmanned aerial vehicles (UAVs). Urban terrain not only prevents the employment of most weapons systems at maximum effective range, but it also limits observation to the next intervening structures. Thus, an enemy separated from advancing forces by even one or two structures is free to move to a flank or continuously engage and withdraw.

The use of UAVs allows advancing forces to spot fleeing or maneuvering forces, and subsequently target them. Additionally, a key principle in urban warfare is isolation of an objective and UAVs allow attacking forces to see behind and around an enemy occupied structure and detect and respond to withdrawal or reinforcement, in effect isolating it. UAVs also allow maneuver forces to fight in depth and attack enemy positions, formations, and mortar firing positions that would otherwise be unobservable. On numerous occasions 3d Battalion, 1st Marines, through the use of UAVs, was able to detect and engage otherwise unseen enemy forces with attack aviation well beyond their lead elements.³⁵ The capability to fight in depth with precision fires without having to employ vulnerable teams and complicate the geometry of fires was significant. It should be noted that 3d Battalion, 1st Marines conducted more than double the number of airstrikes of any other battalion involved in the operation and more than all other battalions combined.³⁶ One reason for this was that the battalion, by chance was equipped with 18 Dragon Eye UAVs compared with other battalions that had the normal table of equipment allowance, which is 6. This was due to the Dragon Eye project officer (Major Dominic Foster) being co-located with the battalion and making available all replacement UAVs during the battle.

The use of the UAVs to detect and strike deep or otherwise unobservable enemy forces led to the development of urban close air support (CAS/UCAS) TTPs for expanded use of Type II and Type III airstrikes. In these cases UAVs would observe an enemy position and an initial grid was determined by the monitor operator. The battalion air officer or forward air officer (FAC) would then refine/confirm the grid via either Falcon View or Digital Precision Strike System (DPSS). The grid would be transmitted to the pilot overhead who would enter the grid into the JDAM for precise delivery to a target that no ground force or the pilot could see.

An additional factor in the success of 3d Battalion, 1st Marines was the unit/locally generated city maps which were 1:2,500 scale and depicted each structure in the city. Eight poster-size map sheets were necessary to depict the entire city. This enabled even junior infantrymen to closely track their position and then identify on the map the structure from which they were taking fire or wanted targetted. These maps allowed significantly enhanced situational awareness regarding friendly positions and not only expedited fires deconfliction, but allowed ordnance to be dropped extremely close to friendly forces given the certainty of their positions. The Fallujah battle represents a significant departure from notable examples of high intensity urban combat such as Hue City, or Grozny, where attacking forces rooted enemy out of structures in close-range small arms engagements. The use of aviation in both examples was limited to periphery actions and area bombing, and both produced significant numbers of casualties among the attacking force.

The ability of U.S forces to destroy enemy fighters inside structures without having to engage them in room-to-room combat was due to several factors that are cornerstone to ECO. First of all, the development of precision munitions such as TOW and Javelin missiles, which gave commanders a direct fire option, and global positioning system (GPS) guided aviation ordnance such as the JDAM. In almost every case fixed wing pilots at 9,000 feet were unable to see the enemy forces engaging U.S. forces. Thus, the GPS guided bomb was ideal and facilitated strikes that other ordnance would have precluded.

While the JDAM was not developed to support distributed forces, it has the capability to do so due to the virtually unlimited range of the aircraft and the precision to allow its employment close to friendly forces and create decisive effects with minimal collateral damage. The ECO concept has hastened the development and fielding of long-range GPS guided artillery

munitions and extended range guided munitions (ERGM) naval surface fires. Both of these tools can be employed in future urban engagements just as aviation fires were in Fallujah and will add a precision strike capability in more aviation restricted environments. These new fire support platforms and munitions that are fundamental to the ECO concept will provide devastating fire support even in cases where aviation fires are limited or unavailable.

Precision fires were so successfully employed in Operation AL FAJR largely due to the presence of additional communications equipment which are currently part of the DO gear list, which comprises a vital element of ECO. As pointed out in Colonel Goulding's Marine Corps Gazette article, a component of the DO gear list is the significant plus-up of tactical communications gear that units were already falling in on in Iraq and Afghanistan and making the aforementioned ad hoc use of noted in MCWL's study.³⁷ The battalions in Fallujah had VHF/UHF SINCGARS radio down to the squad level unlike pre-2003 or in past urban conflicts. The addition of these assets gave squad leaders the capability to directly contact artillery units and fixed wing aircraft over head or more quickly request the assistance of the company FAC. In many cases the FAC was able to assist the squad leader with an airstrike from a separate location due to the addition of these radios. Additionally, when combined with the previously mentioned maps, squad leaders were more effectively able to disseminate precise locations, more rapidly enhancing the situational awareness of the company and battalion. This in turn allowed rapid and accurate deconfliction for airstrikes and allowed the use of aviation ordnance extremely close to friendly positions. In past conflicts many of these strikes would have been impossible. While TOW and Javelins missiles have existed for some time, they were never more effectively employed because squad leaders could request and direct their employment with precision and speed. Clearly the communications assets that are a by-product of ECO facilitated

the success of the Fallujah battle and future conceptual devices with continuous position reporting components will do so to an even greater extent in future battles.

Likewise, UAVs and other sensors are a key aspect of ECO. The capabilities afforded by their use shortly after fielding and with newly developed TTPs proved tremendous. As TTPs are refined and UAVs are fielded to lower echelons and in greater numbers, they too will prove indispensable.

Finally, the company commander's ability to communicate with and track more units, which are providing more information, will present new challenges, as will synthesizing and exploiting this feedback as well as that provided by UAVs. Thus, the ECO concept's focus on better equipping and manning the company operations center is essential to the synergy of these new capabilities.

As previously mentioned, the ECO concept of distributing forces relies on four primary capabilities: enhanced communication and command and control assets, a robust compliment of UAVs and other sensors, long-range precision supporting fires, and enhanced logistics delivery. While significant advances have been made in the first three areas, advances in logistic support of ECO appear to be lagging in the conceptual stages and center around the development of unmanned delivery platforms. While MCWL has conducted experimental exercises to test other aspects of ECO, logistics delivery experiments are pending. Additionally, this aspect of ECO cannot be analyzed through examination of Operation AL FAJR due to the nature of the battle itself, which dealt with re-aggregated forces conducting a linear operation with traditional lines of communication, rear areas, and traditional logistics delivery.

As we optimize our force for inevitable future irregular warfare, we must also retain our ability to fight conventional wars. *Vision and Strategy 2025* states, "The dilemma facing the

Marine Corps is that we must maintain the ability to wage successful campaigns against large conventionally-armed states and their militaries, against widely dispersed terrorists, and everything in between..."³⁸ As our recent history indicates, high-intensity combat can arise in the midst of less kinetic operations. The ECO concept provides smaller units with a more robust compliment of communication assets, precision fires, sensors, and logistics support. Perhaps most importantly, the emphasis on enhanced command and control will enable the company commander to fully exploit these new capabilities. Enhanced Company Operations will improve effectiveness in counterinsurgency and proactive engagement campaigns by facilitating distribution of more capable forces with dramatically reduced risk, and at the same time these capabilities provide increased lethality and survivability in the most intense combat operations, as evidenced by Operation AL FAJR. The Marine Corps must continue to develop and embrace this concept in order to meet the broad spectrum of challenges posed by future conflicts.

¹ Headquarters U.S. Marine Corps, *The Long War*, (Washington, DC: U.S. Marine Corps, January 2008), 3.

² Headquarters U.S. Marine Corps, *A Concept for Enhanced Company Operations: Enabling Marines to Fight the Long War*. (Washington, DC: August 28, 2008), 2.

³ U.S. Department of the Army and Headquarters U.S. Marine Corps, *Counterinsurgency*, FM 3-24 or MCWP 3-33.5, (Washington, DC: U.S. Department of the Army, December 2006), 1-27.

⁴ *The Long War*, 32.

⁵ LtGen Edward Hanlon Jr., "DO: The Time is Now," *Marine Corps Gazette*, July 2004, 36.

⁶ *Ibid*, 37.

⁷ LtCol Edward Tovar, "USMC Distributed Operations," *DARPA Tech*, 2005, 22.

⁸ Col Vincent J. Goulding, "DO: More Than Two Words," *Marine Corps Gazette*, April 2008, 78.

⁹ LtCol Chris Carolan, MCWL, ECO Project, Interview with author, October 25, 2008.

¹⁰ Goulding, 77.

¹¹ Goulding, 78.

¹² Col Vincent J. Goulding, "DO: What's Not to Like?," *Marine Corps Gazette*, February 2007, 51.

¹³ Zachary M. Peters, "Distributed Ops Concept Evolves Into Enhanced Company Operations," *Defense News Stand*, June 16, 2008, <http://www.defensenewsstand.com/2008/distributedopsconceptevolves/06/16/.html> (accessed November 4, 2008.)

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- ¹⁴ Col Vincent J. Goulding, "Enhanced Company Operations: A Logical Progression to Capability Development," *Marine Corps Gazette*, August 2008, 17.
- ¹⁵ Headquarters U.S. Marine Corps, *A Concept for Enhanced Company Operations: Enabling Marines to Fight the Long War*. (Washington, DC: August 28, 2008), 1.
- ¹⁶ Col Vincent J. Goulding, "Enhanced Company Operations: A Logical Progression to Capability Development," *Marine Corps Gazette*, August 2008, 18.
- ¹⁷ Headquarters U.S. Marine Corps, *2008 USMC Concepts & Programs*, (Washington, DC: U.S. Marine Corps, 2007), 58.
- ¹⁸ Headquarters U.S. Marine Corps, *Vision and Strategy 2025*, (Washington, DC: U.S. Marine Corps, 2008), 38.
- ¹⁹ *The Long War*, 13.
- ²⁰ *Vision and Strategy 2025*, 19.
- ²¹ Headquarters U.S. Marine Corps, *Role of the Marine Corps in the National Defense*, FMFM 1-2, (Washington, DC: U.S. Marine Corps, June 1991), 3-13.
- ²² Center for Lessons Learned, U.S. Marine Corps, "Fallujah, 2004: Operations VIGILANT RESOLVE to PHANTOM FURY/AL FAJR," 2005, 3.
- ²³ Russell W. Glenn and Todd C. Helmus, "A Tale of Three Cities: Analyzing Joint Urban Operations with a Focus on Fallujah, Al Amara, and Mosul," (Arlington, VA: RAND National Defense Research Institute, April 2007), 6.
- ²⁴ *Ibid*, 11-14.
- ²⁵ *Ibid*, 7.
- ²⁶ *Ibid*.
- ²⁷ Author's personal experience as Bn Ops Officer and participant in the OPT and subsequent operation.
- ²⁸ Headquarters U.S. Marine Corps, *A Concept for Enhanced Company Operations: Enabling Marines to Fight the Long War*. (Washington, DC: August 28, 2008), 2.
- ²⁹ Rebecca Grant, "The Fallujah Model," *Air Force Magazine*, February 2005, 7.
- ³⁰ *Ibid*, 4, and Capts Tim Jent and Brett Clark, Rifle Company Commanders from 3/1 during Operation AL FAJR, interviews with author, October 19, 2008.
- ³¹ Glenn and Helmus, 19, and Jent and Clark.
- ³² CDR John Patch, USN, "Operation AL FAJR: Enduring MOUT Principles Make the Fight for Fallujah a Success." *Marine Corps Gazette*, November 2006, 4.
- ³³ Major Patrick (PUC) Gallogly, Bn Air Officer 3/1, interview with author, December 3, 2008.
- ³⁴ Jonathan F. Keiler, "Who Won the Battle of Fallujah?" *Naval Institute Proceedings*, January 2005, 2.
- ³⁵ Gallogly
- ³⁶ Colonel Willard A. Buhl, Bn Cmdr 3/1, interview with author, November 2, 2008.
- ³⁷ Goulding, "DO: What's Not to Like?" 51.
- ³⁸ *Vision and Strategy 2025*, 22-23.

Bibliography

- Allison, Major Fred H., USMCR (Ret). "Close Air Support: A Core Contributor to Successful Integrated Operations in Fallujah." *Marine Corps Gazette*, October 2008.
- Center for Lessons Learned, United States Marine Corps, "Fallujah 2004: Operations VIGILANT RESOLVE to PHANTOM FURY/AL FAJR." 2005.
- Center for Lessons Learned, United States Marine Corps, "Urban Close Air Support (Urban CAS): A Summary of Collected Lessons, Observations, Interviews, After Action Reports and Relevant Documents from OEF, OIF-I and OIF-II." April 26, 2005.
- Brannen, Kate. "Lower Level Commanders with More Authority: Sadr City Battle Offers Joint Forces Command and Control Lessons." *Inside Defense News Stand*, December 8, 2008.
- Glenn, Russell W, and Todd C. Helmus. "A Tale of Three Cities: Analyzing Joint Urban Operations with a Focus on Fallujah, Al Amara, and Mosul." Arlington, VA: RAND National Defense Research Institute, April 2007.
- Goulding, Colonel Vincent J., USMC (Ret). "Distributed Operations: What's Not to Like?" *Marine Corps Gazette*, February 2007.
- Goulding, Colonel Vincent J., USMC (Ret). "DO: More Than Two Words." *Marine Corps Gazette*, April 2008.
- Goulding, Colonel Vincent J., USMC (Ret). "Enhanced Company Operations: A Logical Progression to Capability Development." *Marine Corps Gazette*, August 2008.
- Grant, Rebecca. "The Fallujah Model." *Air Force Magazine*, February 2005.
- Hanlon Jr., LtGen Edward. "DO: The Time is Now." *Marine Corps Gazette*, July 2004.
- Headquarters U.S. Marine Corps. *A Concept for Distributed Operations*. Washington, DC: April 25, 2005.
- Headquarters U.S. Marine Corps. *A Concept for Enhanced Company Operations: Enabling Marines to Fight the Long War*. Washington, DC: August 28, 2008.
- Headquarters U.S. Marine Corps. *Marine Corps Vision and Strategy 2025*. Washington, DC: Headquarters U.S. Marine Corps, 2008.
- Headquarters U.S. Marine Corps. *Military Operations on Urbanized Terrain (MOUT)*. MCWP 3-35.3. Washington, DC: Headquarters U.S. Marine Corps, April 15, 1998.
- Headquarters U.S. Marine Corps. *Send in the Marines: A Marine Corps Operational Employment Concept to Meet an Uncertain Security Environment*. Washington, DC: Headquarters U.S. Marine Corps, January 2008.

Headquarters U.S. Marine Corps. *The Role of the Marine Corps in the National Defense*. FMFM 1-2. Washington, DC: Headquarters U.S. Marine Corps, June 1991.

Headquarters U.S. Marine Corps. *2008 United States Marine Corps Concepts and Programs*. Washington, DC: Headquarters U.S. Marine Corps, 2007.

Keiler, Jonathan F. "Who Won the Battle of Fallujah?" *Naval Institute Proceedings*, January 2005.

Patch, CDR John, USN. "Operation AL FAJR: Enduring MOUT Principles Make the Fight for Fallujah a Success." *Marine Corps Gazette*, November, 2006.

Peterson, Zachary M. "Distributed Ops Concept Evolves Into Enhanced Company Operations." *DefenseNewsStand.com*, June 16, 2008.
<http://www.defensenewsstand.com/2008/distributedopsconceptevolves/06/16/.html>
(accessed November 4, 2008.)

Tovar, LtCol Edward, USMC. "USMC Distributed Operations." *Proceedings of DARPA Tech*, 2005.

U.S. Department of the Army, and Headquarters U.S. Marine Corps. *Counterinsurgency*. FM 3-24 or MCWP 3-33.5. Washington, DC: U.S. Department of the Army, December 2006.

U.S. Department of the Army, and Headquarters U.S. Marine Corps. *Operational Terms and Graphics*. FM 101-5-1 or MCRP 5-2A. Washington, DC: U.S. Department of the Army, September 30, 1997.

U.S. Marine Corps Warfighting Laboratory. *Company-Level Operations Center: Concept of Employment*. Quantico, VA: Marine Corps Combat Development Command, November 2008.