From January 2005 to January 2006, XVIII Airborne Corps served as the nucleus of Multi-National Corps-Iraq (MNC-I). The Corps deployed with an experienced staff of officers and NCOs who had spent time in Afghanistan or Iraq, and it went through extensive training and preparation; however, it quickly became clear once we got in country that this deployment would present unique challenges.¹

The intent here is to offer observations, lessons learned, and recommendations based on our rotation. As a professional staff we have an obligation to share our thoughts with leaders and organizations that continue to support our military’s “Long War” strategy for winning the Global War on Terrorism.

After a brief review of the Corps’ year in Iraq, this article will focus specifically on three areas: the operational environment; battle command and the challenges in achieving a common relevant picture in a dynamic electronic warfare domain; and reengineering our existing Live-Virtual-Constructive (L-V-C) processes to better prepare Soldiers and units for deployment.

Looking Back

Iraq held a national election in January 2005 that was preceded by significant coalition combat operations in Ramadi, Fallujah, and Najaf. In the wake of these kinetic operations, observers questioned whether conditions were right for an election, but Iraqi citizens came out in record numbers and, despite threats against their lives, voted for a new and free Iraq.

After the elections, there was a lull before the Iraqi Transitional Government formed and its ministers were appointed. Some had underestimated the challenges of establishing the government and the elements of the Iraqi Security Forces (ISF). Maintaining the momentum of those elections would be a key mission.

When the Corps arrived, Saddamists and members of the former government and army were identified as the principle threat. This view changed in the spring, when a wave of suicide attacks pointed to Abu Musab al-Zarqawi’s (AMZ) Al-Qaeda in Iraq (AQI) as the primary threat to the successful establishment of a legitimate government. Some Corps elements were specifically focused on AQI. To support this effort, the Multi-National Force Commander directed that Iraqi control of the border be reestablished by November. His three broad themes were: AQI out, Sunni in, and ISF in the lead. Kinetic operations were only a part of this process, as information operations were employed to inform the Iraqi populace.

Intelligence emerged of a network that moved foreign suicide bombers through infiltration routes in the Western Euphrates and Tigris River...
Valleys to attack Ramadi, Fallujah, Baghdad, and Mosul. Some of those infiltrators attacked Shi’a at mosques, markets, and where large groups collected. Zarqawi released a letter in July declaring that Shiites were legitimate targets and that any Sunnis killed in attacks were acceptable collateral damage. This letter confirmed AMZ’s willingness to kill innocent Iraqi citizens to advance his goal of establishing a caliphate.

Consequently, our operations shifted northwest to Sinjar and Tal Afar. A regiment was sent to Multi-National Division—Northwest, where it was partnered with an Iraqi division.

Military Transition Teams (MiTTs) from all four services and some coalition partners were sent to facilitate the training of Iraqi forces. Linkages to the other elements of the government remained latent or immature.

Much effort was given to develop a means to gauge the readiness of Iraqi forces. A Training Readiness Assessment (similar to our own Unit Status Report) was developed that was an entirely new tool for the Iraqis. Under Saddam, it was extremely dangerous to identify shortcomings, so the report represented a significant cultural shift. Another key event occurred in May, when the Iraqi Ground Force Headquarters was created. That fall, the headquarters executed its first operation, and with good success.

Challenges were encountered in standing up Iraqi units. Most of these were caused by the new army’s lack of logistical capacity, so units had to be fielded and trained. There were no division or corps support organizations, and these too had to be organized, equipped and trained.

Progress was evident in the Western Euphrates River Valley. By Jan 2006, 80 percent of the operations in northwestern Iraq involved the ISF. Thanks to coalition assistance and generally good Iraqi leadership, ISF units demonstrated that they were, for the most part, mission capable.

As the ISF evolved, it added to coalition tasks. Formerly, our commanders commanded their own
units, but now they were being additionally asked to train and mentor the ISF in a complex environment. The MiTTs stimulated enormous growth in their Iraqi organizations, but the commitment of those transition teams reduced the personnel available within coalition units to accomplish their other assigned tasks.

Further, Saddam Hussein’s trial was ongoing. Moving the principals; protecting the judiciary, witnesses, and accused; and providing medical support for a trial of such magnitude increased the requirements and the complexity of operations.

In 2003, there were only about 240 up-armored vehicles in the entire U.S. inventory. By January 2006, there were more than 18,000 in theater. This was an astonishing logistical accomplishment by government and industry, and it provided a significant counter to the improvised explosive device (IED) threat.

In January 2006, XVIII Airborne Corps handed over command responsibilities to V Corps and redeployed. At that time, there were 227,000 trained and equipped ISF soldiers, 112 Iraqi battalions were in the field, the western border had been re-established, AQI was in disarray, and three successful national elections had been executed, with more than 12 million Iraqi citizens voting in December. It had been an historic year in an historic land.

The Operational Environment

In Iraq, the Corps had four major concerns, each of which played a role in the planning and execution of operations.

Training ISF to lead. A priority was to develop the ISF into a force capable of assuming control of independent counterinsurgency (COIN) operations and defeating insurgent forces. Significant planning, combat, and logistical resources were committed to ISF development to enhance its fighting and sustainment capabilities.

Iraqi political and security concerns. Development of a government that included Shi’ites, Sunnis, and Kurds was critical to ensuring that each segment of the population viewed itself as being represented. Tied to this concern was the need for credible, effective Sunni leadership. As the group that had lost the most influence after Saddam’s fall, Sunnis needed leaders in the government to give themselves a stake in the development of a new Iraq. Finally, crucial to the survival of the new Iraqi Government and its legitimacy was the development of loyal, competent security forces.

Battlefield framework. Doctrine for COIN and for employing an effects-based approach to COIN operations was (and still is) evolving. Consequently, a methodology was developed to achieve the effects necessary for success.

Along with these doctrinal issues, a constantly evolving battlespace required adjustments in planning and operating procedures. The increased likelihood of logistics units contacting the enemy compelled continual revisions in the way we trained newly arrived units.

One of the more challenging aspects of operating in Iraq was the many different types of Iraqi forces. Battle-tracking the Iraqi Army, Police, Special Police, Border Enforcement Forces, and armed contractors moving around Iraq was difficult, but essential to preventing armed engagements between coalition units.

Enabling operations. Throughout our tour, we addressed challenges with respect to the gathering, evaluation, and dissemination of intelligence information. In many cases, intelligence operations in Iraq constitute a search for critical enemy leaders and nodes—a search conducted with legacy systems designed to find ships, tanks, and enemy regiments, not individuals. Not only were our systems not optimized for COIN, but the data they provided was often deposited into stove-piped databases; therefore, it could not be easily evaluated in conjunction with inputs from other systems, nor could it be rapidly disseminated to the warfighters in useful forms. Much organizational effort was spent streamlining intelligence data collection and moving intelligence more easily among warfighters.

Our usual method of apportioning Intelligence, Surveillance, and Reconnaissance (ISR) assets to units did not allow us to weight our ISR efforts most effectively. When looking for individuals or command and control nodes, persistent ISR coverage—“the unblinking eye”—is critical to capturing the moment in time when a target is vulnerable to detection and surveillance. Equitable distribution of an ISR asset among subordinate commands does not satisfy the requirement for persistent coverage of areas or nodes of interest.
Two other battlefield enabling operations were critical to our campaign in Iraq. The first, information operations, delivered non-lethal effects. However, it became evident that their immediate and net effects were not routinely assessed with the same analytical rigor used to gauge those of maneuver operations and lethal fires. Enormous effort was devoted to evaluating the effects of information operations, and the process remains a work in progress. Integration of our conventional forces with Special Operations Forces also played a large part in the campaign. Cooperation between ground forces and their special operations counterparts is close, and continues to improve.

Operational challenges. Some critical challenges were identified. Success in these areas is fundamental to success in Iraq; therefore, they must be mentioned.

- **Limited interagency presence.** Development of governing capacity requires a significant commitment of resources. To this point, a lack of capacity in non-security areas has delayed the establishment of crucial governmental systems such as justice and banking.

- **Lack of ministerial capacity.** Many Soldiers are uninterested in the functions of bureaucracies, yet these organizations are key to critical government functions. Iraq did not have the structures required to make many vital functions routine. As a result, the inability of agencies such as the ministries of defense and interior to support their forces in the field affects the ISF’s overall effectiveness.

  Deficient or nonexistent ministerial capacity in areas other than security may also degrade ISF operational readiness. The lack of a centralized banking system, for example, detracted from forces available. ISF soldiers get paid in cash, and once a month must journey back to their homes to pay debts and pass the money on to their families. They are normally gone for up to a week, with the resultant loss to the unit of ready combat power.

- **Infiltration of security forces.** An obvious concern of both the U.S. and Iraqi Governments is the infiltration of military and police forces by insurgents and their sympathizers, or persons loyal to organizations other than the Iraqi Government. Mixing personnel from different tribes and areas mitigates this, but the prevention of infiltration of the security forces remains problematic.

- **Corruption and criminality.** Especially in the petroleum and electrical industries, many attacks or actions that appear to be part of an insurgent campaign are actually criminally motivated. In the petroleum industry, there is little potential for the individual to profit. However, attacks on the oil infrastructure allow criminals to profit by protecting or repairing the pipeline, by hauling oil not being moved through the damaged pipeline, or by siphoning oil from the damaged pipeline and selling it on the black market. This potential for gain encourages criminal elements to attack the oil infrastructure. Such criminality, or corruption, can be found in other areas in both the Iraqi public and private sectors.
• **Restarting the petroleum industry.** Because Iraq’s most important economic resource is petroleum, the export of oil and petroleum products is necessary to ensure the country’s economic viability. Aging infrastructure, vulnerability to attack at many locations, and a lack of repair capacity limit the export of oil and the import of currency required to rebuild Iraq.

• **Border security.** A common measure of national sovereignty is a nation’s ability to control its borders. Iraq’s borders, especially the western one in Al-Anbar province, have historically been porous. Smugglers and traders move routinely between Iraq and Syria, and so did insurgents. Coalition forces and the Iraqi Government committed manpower and ISR resources to border security to restrict the movement of anti-Iraqi forces into Iraq. Large commitments of materiel, funding, and training assistance have been made to the Iraqi Department of Border Enforcement.

**Battle Command**

The Corps identified significant issues in this key warfighting function.

Battle command is based on three key enablers. The first is knowledge management (KM). Operational KM means synchronizing people, processes, and technology to deliver the right information, to the right people, at the right time in order to achieve battlespace dominance. KM is commander’s business: it must be operationally and not technically focused, and it must cross all functions. The key KM imperatives are—

- Requirements must be driven by operations, not technology.
- There must be interoperability (a common military domain for all joint and coalition applications).
- The system must be collaborative—it must be scalable and non-proprietary. The collaborative tools need to support high bandwidth, as well as disadvantaged users with limited bandwidth. All users must be able to collaborate with each other regardless of bandwidth limitations.
- Knowledge must be continually, iteratively developed as close to real time as possible in response to the warfighter’s needs.
- Knowledge must be able to cross domains, seamlessly bridging secure data networks.
- KM systems must be easy to use.

- The KM architecture must be net-centric compliant, in accordance with the standards of Joint Services Oriented Architecture.

The second pillar is that KM must lead to the creation and distribution of common “relevant” operational information. It must be adaptable to the mission (i.e., it can support full-spectrum operations from COIN to high-intensity conflict environments); it must be timely and flexible to accommodate changing missions (i.e., the data can be “task organized” or data structures changed to support changing missions); and it must be supportive of joint and coalition operations.

The last pillar requires commanders to understand bandwidth limitations and to ensure that they manage spectrum allocation as they do classes of supply. XVIII Airborne Corps considers information and data management common operating picture (COP) tools, spectrum management, enabling technology, and their associated processes to be key components to battle command.

In Iraq, battle command spanned the full spectrum of joint and coalition warfighting concerns, to include policy differences on how we protect our data networks through information assurance, service differences on networking and collaboration, the standards necessary to implement active directories, and our ability to share information in a complex architecture. It was challenging to synchronize the many divergent battle-command efforts in theater to produce timely and relevant information with the Army Battle Command Systems (ABCS) of record.

**Information Management Challenges**

Joint Publication 6-0, *Doctrine for Command, Control, Communications, and Computer (C4) Systems Support to Joint Operations*; Field Manual 6-0, *Mission Command: Command and Control of Army Forces*; and other joint and Army doctrinal publications all identify interoperability among C4 systems as a key to good planning, decisionmaking, and mission execution. Two other major factors necessary for successful net-centric, effects-based warfare are self-synchronization and speed of command.

In the Iraq Theater of Operations (ITO), we had more than 300 different databases tracking friendly and enemy event data across all the warfighter
Figure 2. Battle command as it should be:
Compatible pieces, a seamlessly functioning system.

Figure 3. Battle command as it is in the ITO:
Lots of pieces that don’t fit together.
functions. These systems included the service component Battle Command Systems (BCS) of record, Command Post of the Future, web portals, various significant-activities databases (e.g., Marine Expeditionary Force Command Journal and Digital Battle Captain), spreadsheets, IED databases, and a host of other data depositories. Even within the same warfighting functions—logistics, for example—all users could not see the same data. Theater-wide, there was no common relevant database that all data producers and consumers could subscribe to; one had to know where to go to get information. Consequently, much of the data available could not be shared, resulting in an incomplete picture of the battlespace and little shared situational awareness.

**Battle command systems of record.** Many of the joint and individual service BCSs fail to deliver timely, relevant, and accurate information across all the warfighting functions to the right person, at the right place, at the right time. This impairs our ability to synchronize desired effects on the battlefield. The principal reason is that information is stove-piped within functional areas and warfighting functions, a condition that creates significant barriers to data and information sharing.

Our legacy systems also have limited utility for supporting information requirements in COIN and stability and reconstruction operations because they are not full spectrum. Most of the BCSs in Iraq were accredited for U.S. classified-data networks (i.e., the Secret Internet Protocol Router Network [SIPRNET]) and not coalition networks. Thus, there were limited tools to support information processing in a joint, interagency, intergovernmental, and multinational environment. In many cases, the systems’ complexity created high learning curves resulting in training shortfalls and rapid decay of user skills.

**Multiple common operational picture tools.** Although there were multiple programs of record for battle tracking (MCS, C2PC, ADOCS, FalconView, GCCS, etc.), none were able to create a combined view of enemy and friendly events on a map.

**FusionNet.** An application called FusionNet was developed to augment the current battle command systems. FusionNet is a tactical knowledge management system designed to fuse cross-domain information and distribute it to the lowest connected echelon of tactical users. Because each divisional headquarters in the ITO had implemented its own version of battle-tracking information systems, we needed a tool to standardize the collection of important battle data and permit visibility ITO-wide for common situational awareness. The standardization of information was also essential for operational analysis in support of MNC-I's shaping operations.

Designed for use at all echelons, FusionNet displays significant-activities information in a list or on a map, and it is visible to any FusionNet user in near-real time. FusionNet allows subject-matter experts to add information to an initial spot report, thereby enabling a collaborative process that enhances understanding and awareness of the original event information. The FusionNet database captures all this in a searchable format that allows subsequent queries for analysis and report presentation.

**The BCS bottom line.** Battle command in the ITO is based on a complex of systems and processes that ultimately must address the information needs of warriors, from the soldiers at the tip of the spear to echelons above corps. Future battle command systems must be more conducive to information sharing in a coalition environment, more supportive of KM processes, and easier to use and implement.

**Data management challenges.** There were significant challenges in managing the multiple active directory domains and security domains in theater. The Corps installed, operated, and maintained four separate data networks (Non-Secure Internet Protocol Router [NIPR]; SIPR; CENTRIXS; and the Joint Worldwide Intelligence Communications System [JWICS]) for e-mail, collaboration, Voice Over Internet Protocol use, video-teleconferencing, web-portal access, and FusionNet.

On the NIPR network alone there were more than 40 different active-directory domains (e.g., 42d Infantry Division, 3d Infantry Division, 3d Armored Cavalry Regiment, MNC-I). This made it difficult to replicate global address books, push group policies, and centralize configuration management. Users who left their bases could not authenticate into the network because they were outside their network domain, and permissions and trusts between networks were lacking.
Spectrum management challenges. The XVIII Airborne Corps managed more than 82,000 frequencies in support of U.S. military units and government agencies, coalition organizations, and Iraqi military and security forces. We became the de facto Federal Communications Commission for the theater, responsible for deconflicting frequencies between the military and the Iraqi civil sector. It was a huge and unwieldy process. Iraq, and in particular Baghdad, has a dirty radio frequency (RF) spectrum. It affected C4I systems, Unmanned Aerial Systems (UAS), Blue Force Tracker (BFT) systems, and some force-protection systems.

There were additional challenges supporting the 26 different UASs flying in support of the ITO, and we quickly ran out of spectrum for vehicle requirements. Only by intensively managing times and spaces could the impact of the spectrum be minimized.

A larger challenge many of our units faced was working through “RF fratricide” caused by co-site interference from all the C4I, BFT, counter-IED, and force protection systems mounted on many of the leaders’ vehicles. This interference created additional fog and friction for leaders already working in an unforgiving RF environment.

Live, Virtual and Constructive (L-V-C) Trainers

Having offered observations and recommendations about the operating environment and battle command in theater, we need to consider one other issue: what must happen before deployment, in particular, how units should prepare for Iraq.

Given the dynamic nature of units moving through the Army Force Generation pools and the need to train on mission-specific requirements, we must continue to stress the importance of tailored L-V-C training. Often, units arrived in theater unaware of the latest insurgent tactics. Although Multi-National Force-Iraq established the Counter-insurgency Academy to address this training deficiency, in-theater training is too late—this training should be done at home station. Additionally, the home-station L-V-C environment must be capable of database and scenario changes to maintain training relevancy. It is imperative that commanders be able to alter scenarios based on current reports and Techniques, Tactics, and Procedures (TTPs) emerging from the field. The change from the react-to-ambush battle drill to escalation-of-force TTPs is an excellent example of adapting training to address emerging in-theater tactics.

Establishing a fully integrated L-V-C training capability is a major undertaking. Processes must support the synchronization of training-enabler

**Battle Command Recommendations**

To overcome the many battle command challenges facing MNC-I, we offer the following suggestions:

- Institute service standards and trust agreements with regards to information assurance and data networks across the service components.
- Train with and use FusionNet to gain a COP view for operational situational awareness.
- Build information systems that are simple, intuitive to use, and compatible with our standard Microsoft Office® tools.
- Leverage web-based portal technology for distribution of knowledge and general information management.
- Develop systems that synthesize information and create full-spectrum data requirements that are designed for any type environment.
- Ensure information systems architecture complies with Services Oriented Architecture dictates. The architecture must be interoperable and support iterative and “real-time” modifications in a rapidly changing environment.
- Create cross-domain solutions to bridge data networks seamlessly.

To succeed in our current and future fights, we must be able to maximize battle command and create systems that are accessible at the lowest levels.
funding with system fielding. Finally, we must develop mechanisms to ensure lessons learned and TTPs are pushed from theater to units and organizations to improve training relevance.

Conclusion

The operational environment in Iraq is dynamic and complex. It reaches across all lines of operation, from security and training of the Iraqi Security Forces, to development of critical infrastructure, to supporting and developing a fledgling democratically elected government and setting the conditions for its success. COIN requires a capability to find cells and individuals, not motorized rifle regiments. Army training simulation systems have to adapt quickly to provide relevant training for Soldiers and units. This is especially true for units that are not part of a brigade combat team or do not get the benefit of a mission rehearsal exercise at one of the combat training centers. Every one of the challenges addressed in this article are surmountable and can be fixed over time for future rotations.

The real strength of our nation however is not systems, doctrine or policy. It is young men and women who, if necessary, are willing to go in harm’s way and defend our nation against a dangerous enemy. They were, and remain, on point around the world, and they are a national treasure. MR

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NOTES

1. To prepare for its MNC-I duties, the XVIII Airborne Corps headquarters deployed to Korea to support the Ulchi Focus Lens exercise, conducted four command post exercises, went through the Battle Command Training Program, and participated in Joint Forces Command Academics and mission rehearsal exercises.
3. MCS stands for Maneuver Control System, C2PC is Command and Control Personal Computer), ADOCS is Automated Deep Operations Coordination System, and GCCS is Global Command and Control System. FalconView is an airborne digital mapping platform.