

# Preparing the Engineer Brigade for Operation Iraqi Freedom

By Colonel Don C. Young

*"Engineers are everywhere! No matter where I go in Baghdad, I see engineers hard at work, doing a wide variety of missions."*

—Brigadier General Martin Dempsey  
 Commander, 1st Armored Division  
 16 July 2003

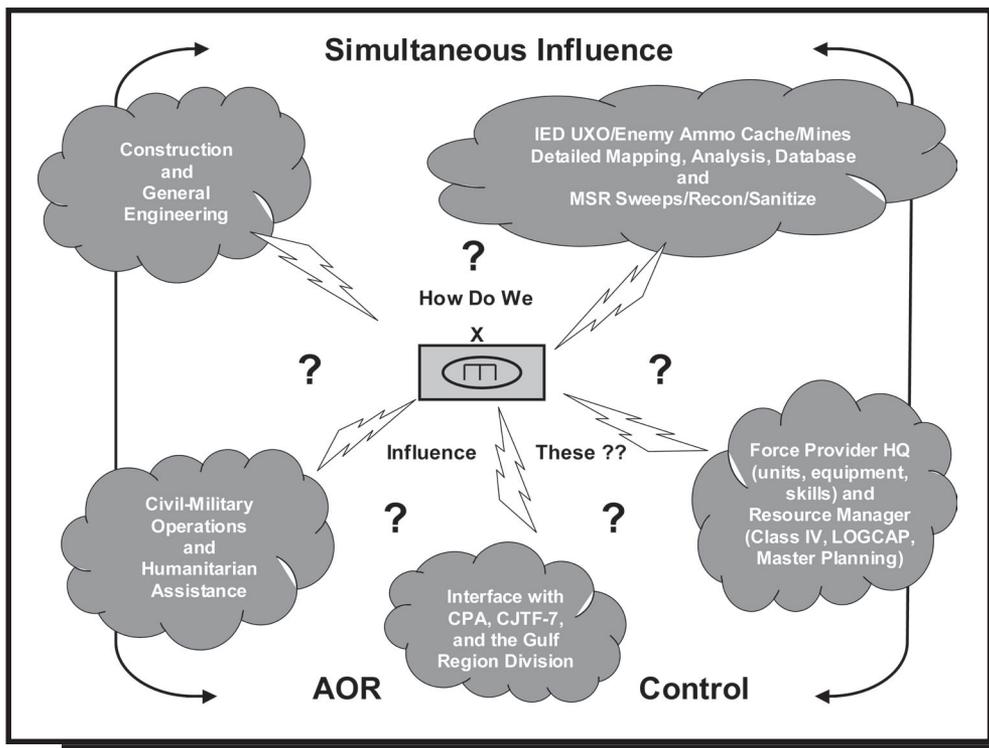
**H**ow does a unit prepare for stability operations and support operations (SOSO) missions with high-intensity conflict operations occurring daily? This article incorporates the initial lessons learned from the 1st Armored Division (1AD) Engineer Brigade operations in Baghdad and recent observer-controller trends used to prepare an engineer brigade headquarters during a division command post (CP) exercise for a follow-on Operation Iraqi Freedom-designated deployment. The article focuses on three key themes: mission areas, CP operations, and predeployment training.

## Mission Areas

**T**he figure below outlines the five baseline mission areas that an engineer brigade (or division engineer in the case of a light division) must influence for the mission success of the division. Some may classify them as "glass balls," but I would rather treat them as mission-essential task

list items. This enables the engineer brigade and subordinate units such as sapper battalions and assigned echelon-above-division (EAD)/echelon-above-corps (EAC) units to conduct further mission analysis to identify the battle tasks required for engineers at all levels. These battle tasks and their information management requirements will drive the structure, operations, and systems of the engineer brigade CPs: engineer main (EMAIN), assistant division engineer (ADE), engineer tactical action center (ETAC), and engineer rear (EREAR). Once engineer leaders understand the missions of the Operation Iraqi Freedom theater and how to run the engineer CPs, they can focus the predeployment training program on the essential individual and collective tasks required for mission success.

The engineer brigade must configure itself to handle simultaneously the role of the five mission areas. Each one must be treated separately with fully assigned assets for command and control responsibility. A construction



Baseline Mission Areas That Engineers Must Influence

management section (CMS) is an absolute necessity, whether augmented from a combat or construction engineer group or combat heavy battalion headquarters or fielded “out of hide” with school-trained engineer officers and senior non-commissioned officers assigned to the brigade headquarters. Also, the use of liaison officer augmentation at key locations will enhance situational awareness and parallel planning. In our case, the EMAIN often was able to inform the division main CP about engineer missions about to be assigned to the division from Coalition Joint Task Force-7 (CJTF-7)/Coalition Provisional Authority (CPA) because of the highly effective use of liaison officers. Another area of interest is contract construction completed by many different programs and “colors” of money. The key to success is the ability to access, track, and influence the division priorities with construction contracting capabilities within the commanders’ discretionary funds, civil affairs, the CPA, and the Gulf Region Division.

The engineer brigade civil affairs officer (S5) pays big dividends for the EMAIN. The S5’s interaction with the Assistant Chief of Staff, G5 (Civil Affairs); the division Civil-Military Operations Center (CMOC); and civil affairs units will help identify and obtain construction contracts and hard-to-get Class IV supplies. In some cases, sapper battalions are attached to their brigade combat team (BCT) headquarters. Even under this type of command and support relationship, the force provider role of supplying trained and ready forces never ends for the division engineer. Therefore, the engineer brigade commander (or division engineer) retains the essential responsibilities for maintaining engineer equipment, supplying force protection barrier material, and providing construction and additional sapper capabilities. A key element to success is sapper battalion reporting (dual chains of command) and functional area stovepipe requirements that must remain in effect to maximize engineer support across the entire division sector. The Assistant Division Commander (Support); the Division Support Command (DISCOM); and the Assistant Chief of Staff, G4 (Logistics), will also look to the engineer brigade for expertise and leadership on base camp master planning, Logistics Civil Augmentation Program (LOGCAP) contract interface, facility preparation work, and priorities for Class IV transport and issue.

One last area that the engineer brigade must take the lead on is improvised explosive device (IED) database tracking; predictive analysis; and tactics, techniques, and procedures (TTP) trend identification through coordination with explosive ordnance disposal (EOD) units, the Assistant Chief of Staff, G2 (Intelligence), the analysis and control element (ACE), and the BCT engineers. The brigade intelligence officer with All-Source Analysis System-Light capability in the EMAIN provides IED expertise throughout the division.

### **CP Operations**

**T**he basic layout of the engineer CPs must be structured to handle the full spectrum of combat operations. Our crossing force headquarters configuration for the

EMAIN facilitated the CP expansion for this deployment. Force modernization will include the usual problems of transitioning from analog to digital systems, coupled with the challenges of transitioning CPs from high-intensity conflict to SOSO missions. Information management is the key system for ensuring success by enabling the commander to “see himself.” Identifying the critical information requirements is essential to streamlining the wide variety of data that comes into a CP daily and then deciding what to do with it. One way to achieve this objective is to establish a common operational picture (COP) that aligns and synchronizes all four engineer CPs, especially for informing the division command group. It can include digital maps, but map images alone will not help the division engineer to influence the division fight. One invaluable option is the “brigade snapshot” (shown in the table on page 9). This one-page document enables the brigade commander and subordinate commanders to see themselves and to quickly outline problem areas. It drives the information management process, to include critical collection efforts. Coupled with the rolling battlefield update briefing slides and current missions on sector maps, the four engineer brigade CPs remain synchronized and focused with the same engineer COP.

### **Predeployment Training**

**U**nits will struggle with the mandatory Coalition Forces Land Component Command (CFLCC) and major command training requirements to be accomplished before deployment and those required during reception, staging, onward-movement, and integration (RSOI). Based on our experience in Baghdad, leaders should focus on the following “Big 8” areas of predeployment training for all engineer units:

#### **Weapons Familiarization**

Every soldier is a rifleman first. Help your soldiers become comfortable with their weapons. Go to the range as often as possible and practice reflexive fire techniques, both mounted and dismounted. Like it or not, engineers are performing a lot of infantry tasks in Iraq.

#### **Convoy Live-Fire Training**

Soldiers must be accustomed to firing their weapons while mounted. This should be practiced before entering the theater. Scenarios can include ambushes along obstructed routes, IED attacks, IED attacks followed by rocket-propelled grenade and small arms fire, attacks by single or multiple snipers, and mounted or dismounted suicide bombers. Each scenario contains a unique set of challenges and appropriate counterreactions.

#### **Extra Crew-Served Weapons Gunner Qualification**

There is always a shortage of qualified gunners for tactical movements and patrols. Double-qualify so you can continue the mission while allowing the crew to rest. Include squad automatic weapons in this effort.



## **IED/Unexploded Ordnance**

Ensure that every soldier has situational awareness, the ability to recognize a multitude of devices, an understanding of force protection measures, and the TTP for enemy employment.

## **Antiterrorism Training**

The focus is on how to design secure forward operating bases. Engineers are expected to be the experts, but few have received any training on minimum standoff distances for various IEDs and how to effectively design and emplace protective measures against vehicle and suicide bomber attacks. Capitalize on the talents and resources of the Engineer Research and Development Center via TeleEngineering or other means, when appropriate.

## **Engineer and EOD Interaction**

Clearly define the sapper role versus the EOD role for the various types of joint missions being performed in theater.

## **Use of Demolitions**

Validate every sapper and engineer, regardless of military occupational specialty, on demolition procedures. They will definitely use them in Iraq. Include in this training the proper manner to safely destroy captured munitions without causing second-order hazards.

## **Physical Fitness**

Emphasize upper-body strength and long-distance runs to provide the fitness needed to endure the heat and the tempo of operations.

## **Mission Success**

**T**he Big 8 will pay huge dividends for your unit as an enduring foundation for a year-long deployment. Additionally, leaders must oversee focused planning to establish systems within each engineer brigade CP and to complete required cross-leveling to handle daily requirements. Consider the following areas for ensuring mission success:

- Integration of EAD engineer units into the division (task-organized Active Component/Reserve Component assets) and mission planning for other EAD/EAC engineer assets conducting a short-term mission in the division sector.
- Use of division terrain teams in support of five BCTs (urban operation products) maximized.
- Role of the ADE in the division targeting effects process and operations and plans.
- Creation of a CMS (out of hide) for the EMAN. This must include battle-tracking techniques for contract construction and troop construction projects.
- Operation of the Class IV yard instead of leaving it to the DISCOM or main support battalion to run a division-level yard for force protection and construction materials.
- Maintenance support of construction equipment (beyond sapper unit modified table of organization and equipment

[MTOE]) and special engineer equipment in the sapper battalions.

- Security, repair, and upgrade of existing infrastructure (water, power, sewer, airports, zoos, and bridges).
- Assured mobility through bridge replacement planning and main supply route upgrades.
- Predictive analysis of IED and UXO use by the enemy.
- Use of the ETAC on CPA/ CJTF-7/division priority project sites.
- Command and control of MK2 bridge boats for river patrols.
- Request for information and force request process to the next higher engineer headquarters.
- Use of the up-armored D9 and mine-clearing armor-protected (MCAP) D7 dozers (TTP).
- Use of casualty tracking/reporting (doctrinal use, as well as use of alternative channels).
- Use of EREAR manning versus rear area engineer responsibilities.
- Best utilization of an assigned engineer group headquarters.
- Use of the corps wheeled battalion across the division sector.
- Use of patrol and tactical road march briefs and operations.
- Reaction to contact (mounted and dismounted, direct/indirect/ambush).
- Knowledge of unit basic loads and vehicle movement load plans.
- Utilization of contracting/field ordering officer/Class A agent.
- Security plans of every operation with internal engineer assets.
- Use of an engineer liaison element with the U.S. Army Corps of Engineers division, the CMOC, the CPA, and attached maneuver units (beyond the normal three BCTs).

## **Conclusion**

**T**he Engineer Regiment is fully engaged in the Iraq theater of operations. An example is shown in the photo on page 11. It depicts sappers from a Reserve Component EAD unit—the 1457th Engineer Battalion (Corps) (Wheeled), Utah Army National Guard, task-organized to the 1AD Engineer Brigade—working on a war-damaged suspension cable on the 14th of July Bridge, now called the Freedom Bridge. The repair design was done through reachback capability to the U.S. Army Engineer Research and Development Center at Vicksburg, Mississippi, via the brigade TeleEngineering Toolkit, while the BCT sappers provided security and logistical support to the EAD unit operating in their BCT sector. Materials to repair the bridge were fabricated by soldiers from the 1457th, who have extensive military and



**Sappers work on a war-damaged suspension cable on the 14th of July Bridge, now called the Freedom Bridge.**

civilian experience with such tasks. This is an important point to note as Reserve Component soldiers bring a wealth of expertise from their civilian professions and experiences. The heavy-gauge cable for the repair was obtained by the 1AD Engineer Brigade logistics officer through a local vendor. Initiative and resourcefulness by engineer leaders focused on logistics resources are paramount in missions of this nature.

The synchronization and resourcing of engineer operations from the sapper squad to the contracting support of infrastructure rebuilding in a division area of operations fall to the engineer brigade commander (or division engineer). The current engineer brigade MTOE and doctrine must be adapted for mission success in Iraq and future theaters of operation. Operation Desert Storm in Iraq, Operation Joint Endeavor in Bosnia, and Operation Iraqi Freedom clearly outline the need for, and added value of, having an engineer brigade organic to a heavy division. We must prepare our young engineer leaders for the challenge to make them flexible for future operations as our senior leaders on the ground. They are our future and are vital to ensuring that engineers remain as superb value-added to the combined arms team. Essayons! 

*Colonel Young serves as executive officer to the deputy commanding general of U.S. Army, Europe. He was the commander of the 1AD Engineer Brigade from July 2001 to July 2003. The brigade tripled in size with the addition of EAD/EAC engineer units following the transfer of authority with Engineer Brigade, 3d Infantry Division, in Baghdad in May 2003. A graduate of the U.S. Army War College, he holds a bachelor's in civil engineering from Vanderbilt University and a master's in civil engineering from the Georgia Institute of Technology and is a certified professional engineer in Virginia.*