# MORE THAN MANAGEMENT

By Major Clarence B. Kemper

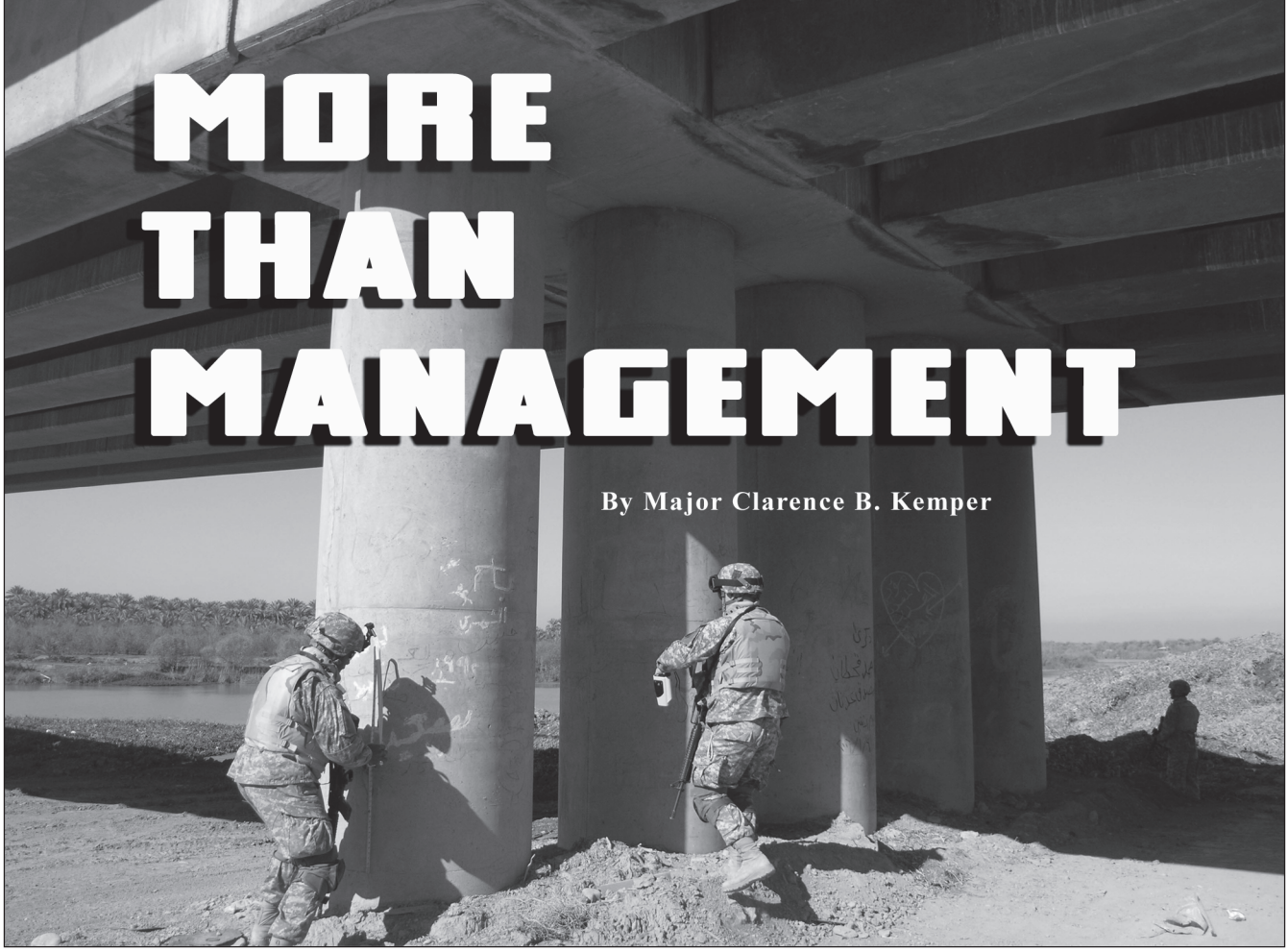

Photo by Major Clarence B. Kemper

Whether you call the collection of military occupational specialty (MOS) 21T engineer technicians and 21D facilities/contract and construction management engineer officers a construction management section (CMS) or a design management section (DMS), the word "management" seems to be the operative word. Usually found in engineer groups and brigades, the CMS and DMS traditionally act as a small engineering firm, providing surveying, design, soils testing, materials testing, and quality assurance/quality control (QA/QC) for construction, materials, and drawings to supported units. When Detachment 8 was formed from the 412th Engineer Command (ENCOM), United States Army Reserves, to support the 130th Engineer Brigade as its CMS or DMS for Operation Iraqi Freedom, it was known that the mission would be more than just management.

The commander of the 130th knew that the brigade would have a wide range of missions. It would be responsible for maintaining and improving contingency operating bases, developing convoy support centers, and overseeing various technical units such as facility engineer teams (FETs), engineer utility detachments, and United States Air Force (Civil Engineer) detachments. These responsibilities would be in addition to the traditional brigade role of providing command and control for combat engineers, construction units, and bridge units and dealing with Iraqi infrastructures. The commander also knew that beyond the traditional role of a CMS or DMS, this kind of organization (from the Reserve Component) offers experienced individuals with real-world engineering experience.

## Formation of Detachment 8

The 130th Engineer Brigade is based in Hanau, Germany. The 412th area of responsibility includes the United States European Command and the United States

**The photo above shows output from the USACE Automated Recon Recording Kit, which integrates video capture and voice recordings while storing the vehicle's coordinates and gyroscope data as it travels.**

Photo by Major Clarence B. Kemper

**A Soldier records measurements during a bridge reconnaissance on the Tigris River.**

Pacific Command. While many of the Reserve Component engineer brigades have a CMS or DMS, the Active Army combat engineer brigades no longer have these assets. When the 130th requested technical engineering support for various Iraq-specific missions, the United States Army Forces Command tasked the 412th to provide a team. The result was Detachment 8.

The 412th ENCOM provides command and control for theater engineer operations, with its primary mission being the Eighth United States Army and the Korean Peninsula. However, the unit also has a large number of MOS 21T Soldiers and 21D officers who stay engaged in technical engineering missions throughout the United States, Europe, and Asia, in addition to unit participation in annual joint multinational exercises in Korea. Multiple detachments and individual augmentees have already been mobilized from the 412th to support current operations in Iraq, Afghanistan, Kuwait, the Philippines, and the Balkans. Many of these engineers and technicians have civilian engineering jobs in government or industry, giving them a depth and range of experience not typically available within the Active Army.

The 412th staff capitalized on these individuals, forming a team with a wide range of technical abilities and demonstrated tactical proficiency. Almost all of the officers have engineering degrees and have civilian experience in the civil, mechanical, structural, electrical, environmental, and security engineering fields. The lead surveyor and designer had civilian survey and civil and mechanical design experience, the lead QA/QC individual had many years of commercial materials testing lab experience, and several of the technicians were construction contractors with knowledge of construction and drawings. Several experienced MOS 21H construction engineering supervisors provided additional depth to the team. The detachment commander served with the United States Army Corps of Engineers® (USACE) in the Gulf War as an Active Army engineer officer. Later joining USACE as a civilian civil engineer, he was responsible for USACE projects in South America and has years of engineering experience in areas torn by decades of guerilla warfare. He was also mobilized as a civil engineer for Operation Enduring Freedom in a previous detachment from the 412th and supported operations in northern Iraq and the Balkans.

However, the detachment commander realized that even this pool of talent was not going to be enough to be ready for the missions they would encounter. Many of the Soldiers identified for mobilization were sent to civilian and military training classes, ranging from reclassifying some of the enlisted as 21Ts to add to the technical workforce to training in improvised explosive device (IED) defeat, security engineering, safety, and contracting. Mobilization training at Camp Shelby, Mississippi, included base camp master planning and infrastructure assessment training from USACE, training on modern global positioning system (GPS) survey equipment, and other technical areas including required tactical training.

The 412th Soldiers linked up with the 130th in Kuwait in early October 2005. A few days later, the first teams were sent forward to Iraq to start the missions, and they maintained a rapid pace throughout the entire deployment. The 130th, with the 412th and other subordinate engineer units, assumed nationwide responsibility as the only corps-level engineering brigade.

## Command and Control

Command and control was one of the first missions that the 412th started that was not a traditional CMS or DMS function. Since the FETs, the utility detachments, and the Air Force engineers were all working for the 130th, the

Photo by Major Clarence B. Kemper

**Periodic technical reconnaissance allows Soldiers to track wear and tear on highways and helps predict future maintenance needs.**

130th commander capitalized on the 412th's leadership and expertise to make Detachment 8 the central hub for corps-level technical engineers for the brigade. While Detachment 8 did not have formal command authority over these units, it took on many of the operational aspects of coordination, mission development, and supervision as needed on behalf of the brigade. The command and control assets were critical, particularly with units spread out all over Iraq. When working with these technical units, it was vital to have someone who both understood their world and was experienced in command and control. By "leaning forward in the foxhole," the 412th kept these assets engaged and plugged into future operations planning.

## Integration

The 412th provided administrative support, cross-leveled expertise, and was task-organized for specific missions, while augmenting these units with design, engineering, survey, and QA/QC support as needed. The DMS not only developed its own designs but reviewed those for supporting units, providing additional design and engineering upon request. The brigade provided additional staff and resource support. However, for routine operations and technical work, the 412th assumed many of the duties normally falling to the brigade with respect to these units, leaving the brigade to concentrate on the line units and its missions. At the same time, the 412th assisted in intelligence analysis, operations, project tracking, mission development, and other tasks when additional expertise was needed. The detachment became fully integrated into brigade operations, while still maintaining a distinct mission set.

## Infrastructure Assessment Missions

Assets were needed for future projects to go out and do the technical reconnaissance and then feed the results back for internal staffing. From that point, the CMS or DMS would develop a solution internally, reach back to USACE for additional support, or conclude that a given problem wasn't an issue that could be addressed at the corps engineer level. This was particularly true for infrastructure assessment missions. Some missions ranged over an extended distance, such as a 400-kilometer reconnaissance for developing estimates and scopes of work for road improvements. Other missions required working with the local Iraqi engineers for troubleshooting water systems and in building projects. Since these infrastructure assessment missions were "outside the wire," tactical proficiency was also required. During their deployment, the 412th found IEDs on job sites, were attacked by anti-Iraqi forces while on convoys and reconnaissance missions, and had mortars or rockets land near their work site or living area. Their ability to respond quickly and go anywhere at any time was cited as a key factor when compared to civilian employees and contractors who had comparable technical skills.

### Paving Supply Routes

Some of the missions had been going on for several Operation Iraqi Freedom cycles, such as paving supply routes. These missions had technical, operational, and strategical issues, such as—

- Finding a source for quality paving materials.
- Planning construction around convoy staging requirements and multiple contractors.
- Shifting the availability of funds.
- Working with various Iraq ministries.

Paving supply routes not only affects coalition convoys but also civilian commerce, creating long-term impact on the rebuilding of Iraq.

### Water System

The water pipeline from the Tigris River to the Qayyarah West (Q–West) Airfield provides water for many of the local communities. Attacks on the pipeline by anti-Iraqi forces not only interrupted water supplies to Q–West but also to the villages and towns in the region that had less storage capacity and were more vulnerable to a water stoppage. The 130th and the 412th partnered with Q–West units and local leaders to protect the water system as well as to upgrade pumps, relocate taps on the pipeline, and increase overall water production.

Similar civil-military missions included the evaluation of water treatment plants, sewage treatment plants, and buildings for local schools, often with subsequent design or other engineering support to improve those facilities.

**Environmental Surveys**

Environmental surveys are requirements for closing down any U.S. facility in Iraq, but there were no environmental survey teams available. This became critical to the corps-level mission of drawing down the coalition basing footprint. Under the leadership of a lieutenant colonel who is an environmental engineer with USACE as a civilian, several teams were trained in environmental standards, sampling equipment, and personal protective equipment. Through their efforts, a series of bases and facilities (including the Abu Ghraib prison) were closed or handed over to the Iraqis in a timely manner.

## Quality Assurance/Quality Control

Alongside all of these other missions was the traditional CMS or DMS role of providing in-house design and managing troop construction. Designs included multistory, wooden buildings; concrete guard towers; building renovations; and roads and runways. Structural, civil, mechanical, electrical, environmental, and security engineering were integrated to create complete design-build packages for other units or contractors to execute. The QA/QC section worked with local concrete batch plants to improve the quality and consistency of the concrete by sharing expertise and conducting regular testing to ensure that the specifications were met. The QA/QC section also worked with units and contractors to ensure conformity of the plans and specifications or to work out variances, if required. Survey teams were sent out all over Iraq on missions that included performing 1,000-acre surveys and spot surveys to ensuring that new equipment was properly set and integrated into existing systems.

## Conclusion

The 130th Engineer Brigade could not have accomplished these missions without Detachment 8, 412th ENCOM. Through its leadership and technical expertise—ranging from proactively assessing possible future projects (on and off post), supervising and assisting the FETs, and working with engineers of all services—Detachment 8 was a true force multiplier for the brigade and accomplished much more than just management.

*Major Kemper is the structural, mechanical, and force protection engineer for Detachment 8. Commissioned in the United States Army Reserves, he has commanded a combat support equipment company and a mechanized combat engineer company. Since joining the 412th ENCOM in 2003, he has served in Germany, Italy, Korea, Vietnam, and Thailand. He is a registered professional engineer in Louisiana, Texas, and South Carolina and holds a mechanical engineering degree from Louisiana State University. In civilian life, he is a consulting engineer.*