
*Afghan National Army soldiers learn how to use a piece of heavy engineer equipment. (Photo by Capt. Laura Beth Beebe)*

# Engineer Sustainment in Afghanistan

■ By Maj. Pierre A. Spratt and Capt. James M. Beebe

From September 2013 to June 2014, the 130th Engineer Brigade, Joint Task Force (JTF) Sapper, used a sustainment cell of 15 personnel to overcome theater-wide logistics friction, sustain the brigade, and achieve continuous logistics preparation of the battlefield in Afghanistan.

The sustainment cell used specific tactics, techniques, and procedures to overcome the complexities associated with achieving sustainment goals. The cell applied external coordination and relationship support to achieve success in the brigade's four operational and logistics lines of effort: train, advise, and assist; reduce and retrograde equipment; provide assured mobility; and conduct general engineering.

## Engineers on the Battlefield

Combatant commanders use engineers for unified land operations across the full range of military operations. Primarily, commanders use engineers in a deployed environment to ensure mobility, enhance protection, enable force projection and logistics, build partner capacity, and develop national infrastructure.

Field Manual 3–34, Engineer Operations, says, "Fundamental to engineer support to operations is the ability to anticipate and analyze the problem and understand the operational environment. Based on this understanding and the analysis of the problem, engineer planners select and apply the right engineer discipline and unit type to perform required individual and collective tasks. They must think in combinations of disciplines, which integrate and synchronize tasks in concert with the warfighting functions to generate combat power."

Every unit, regardless of type, generates combat power and contributes to the operation. Engineer disciplines are generally aligned in support of specific warfighting functions, although they have an impact on the others.

Survivability support is linked to the fires warfighting function. Com-


*Soldiers of the 1438th Multi-Role Bridge Company, Missouri National Guard, disassemble an over bridge in Gereshk, Helmand province, Afghanistan. The over bridge was a replacement for a bridge that had been damaged during an insurgent attack. The Theater Engineer Brigade sustainment cell disassembled U.S. and NATO Acrow Bridge sets so that they could be replaced by more permanent structures that Afghan units will maintain. (Photo by Cpl. George Huley)*

bat engineering is aligned primarily with the movement and maneuver and protection warfighting functions. General engineering focuses its support on the sustainment and protection warfighting functions and the reinforcement of combat engineering outside close combat. Geospatial engineering primarily aligns with the mission command and intelligence warfighting functions. Considering these associations, commanders adjust and implement the necessary command and support relationships.

## TEB Sustainment Operations

Sustainment is a complex process that integrates several components, including people, systems, materiel, and health services. From a strategic perspective, sustainment builds Army combat readiness, delivers a combat-ready Army to combatant commanders as part of the joint force, and maintains combat power and endurance across the operational area.

The 130th Engineer Brigade served as the Theater Engineer Brigade (TEB) at Bagram Airfield, Afghanistan, after assuming the responsibility from the 555th Engineer Brigade. The TEB's sustainment cell was responsible for theater-level engineer sustainment and logistics preparation of the battlefield for seven battalion task forces, two naval mobile construction battalions, two construction management teams, one explosive hazards team, and one Air Force prime base engineer emergency force squadron in the Combined Joint Operations Area–Afghanistan (CJOA–A).

At the brigade level, the first challenge to managing the subordinate unit composition and dispersion was to develop and implement a fully integrated joint sustainment cell.

This cell provided logistics support for not only JTF Sapper and its trace units but also for other U.S. Forces–Afghanistan units through training, education, synchronization meetings, and the employment of competent multifunctional logisticians.

The retrograde line of effort quickly became the brigade's most challenging as JTF Sapper established its presence in the CJOA–A. Retrograde and equipment reduction were logistically complex because JTF Sapper held the largest theater-provided equipment property book in the CJOA–A.

The TEB needed to support planned retrograde requirements and

quickly develop a retrograde common operational picture and overarching retrograde operations construct. Developing this framework was critical to the brigade's success and required intense management to achieve planned retrograde goals while balancing projected, yet uncertain, operational requirements.

The construct also included the reduction and retrograde of operational readiness floats. As the route clearance force structure was reduced, the TEB had to "right size" the operational readiness floats. This supported the newly developed route clearance patrol (RCP) mission essential equipment list and helped to set conditions for future operations.

The TEB also defined the U.S. Central Command (CENTCOM) materiel recovery element (CMRE) RCP transfer concept, which resourced CMRE RCP units with the appropriate equipment to support projected mission requirements.

To support general engineering efforts, the sustainment cell established a mission essential equipment list for horizontal and vertical construction units and forward support and headquarters companies. This allowed units to begin the retrograde and redistribution of excess equipment across the theater.

To influence the active management of this complex problem set, the sustainment cell developed the TEB's logistics significant activities report, providing both internal and external visibility of sustainment operations while matching logistics requirements to theater capabilities.

This, in concert with the logistics common operational picture, resulted in the retrograde of more than 1,500 containers and approximately 23,000 pieces of theater-provided equipment. The value of this equipment was more than $853 million. The retrograde was achieved seven weeks earlier than planned.

## Transportation Operations

The sustainment cell assumed a critical enabling capability that was not organic to the brigade: the role of a transportation officer. The sustainment cell's transportation cell planned and coordinated multimodal transportation in support of the TEB. It executed the drawdown of force manning levels throughout the CJOA–A and cleared up frustrated cargo for both deploying and redeploying units.

The TEB monitored unit and equipment movements by integrating numerous sustainment information systems and tools. These systems included the Battle Command Sustainment Support System, Command Post of The Future, and in-transit visibility tools.

The transportation cell's intense coordination with CENTCOM, U.S. Forces–Afghanistan, U.S. Army Central, the Forces Command, the International Security Assistance Force, the Air Mobility Division, the Transportation Command, and the Military Surface Deployment and Distribution Command ensured the timely deployment and redeployment of units and the arrival of equipment sets to units by required dates.

In support of general engineering


*Command Sgt. Maj. John Etter talks with the 207th Corps Engineer Kandak's command sergeant major about equipment training methods and how to maximize soldier comprehension. (Photo by Capt. Laura Beth Beebe)*

efforts, transportation was coordinated for logistics flexibility with the first ever airlift mission of armored heavy engineer construction equipment in the CJOA–A. This required direct coordination with multiple external agencies and in-depth research and analysis.

The unit had to meet Intra-Theater Airlift Request System shipping standards to send the equipment to the CENTCOM Deployment and Distribution Operations Center. The equipment was then delivered across the CJOA–A using four C–17 Globemaster III aircraft.

### Train, Advise, and Assist

The train, advise, and assist mission was an intensely coordinated effort across several high-level U.S. and international organizations.

The mission remained the brigade's primary line of effort throughout the deployment and encompassed the management of several distinct organizational constructs, such as embedded training teams, engineer mentor and advise teams, and engineer brigade advise and assist teams. These teams provided training and supervision for various Afghan National Army (ANA) Corps Engineer Kandaks (CEKs) in every regional command.

A concerted sustainment effort was required to establish and field the National Engineer Brigade (NEB), which serves as the sole ANA engineer brigade. With the establishment of the NEB, the sustainment cell developed a complementary concept of support. The concept of support was adjusted regularly to meet the persistent challenges of this particular mission.

Some of the support constraints were the use of the Afghan Security Forces Fund, the foreign excess personal property (FEPP) process, the coordination between the TEB and associated Turkish and Bulgarian security forces advise and assist teams, and the use of the Afghan logistics system for supply procurement.

FEPP proved to be instrumental in the procurement of all classes of supply. In situations where normal contracted timelines would be too long based on operational need or in which materiel was deemed excess, using the FEPP process to donate materiel to the ANA proved invaluable.

Discussions about ANA sustainment operations began to focus on the following problem: For how long does the TEB resource the train, advise, and assist mission using established NATO processes, and when should the ANA use its own sustainment channels?

Normally, a CEK would request materiel support through its respective corps. However, the NEB did not align under a corps and thus submitted and received classes of supply as theater-level assets directly from the ANA general staff G–4.

As ANA sustainment channels began to function appropriately, the dependence on NATO resourcing waned, and the result was the fielding and establishment of the NEB consisting of two CEKs: the Construction Engineer Kandak and the Specialty Engineer Kandak. These two units, under the tutelage of the aforementioned entities, trained in several engineer specialty skills, including bridging, water well digging, and horizontal and vertical construction.

During this deployment, the key to logistics success was the integration of external support agencies, such as ManTech, Product Manager Assured Mobility Systems, and AC First, into the sustainment working groups, forums, and logistics synchronization efforts.

Sustainment success for the TEB in Afghanistan, defined as uninterrupted combat power projection and the support of the commander's objectives, hinged on remaining dedicated to sustainment as a joint interdependent capability, integrating external support agencies, and leveraging acquisition, logistics, and technology functions. In short, success was achieved by ensuring all the key players were sitting at the table.

These efforts enabled the sustainment cell to triage sustainment issues, which ensured the fleet readiness of 54 RCPs. As a result, the TEB eliminated more than 140 improvised explosive devices, protecting coalition forces and Afghan citizens alike.

Because JTF Sapper supported nation building through training, advising, and assisting, the ANA now has an organic engineer capability to conduct assured mobility operations, bridging operations, water well drilling, and general engineering construction.

Sustainment forces supporting combatant commanders need to provide committed forces with flexible support for their operations. The TEB set the conditions for assured mobility operations, general engineering, and the train, advise, and assist mission so that units in Afghanistan can continue to transition and posture for final operational support within the CJOA–A.

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Maj. Pierre A. Spratt is the G–3 operations officer and Analysis and Assessment Team leader at the Military Surface Deployment and Distribution Command's Command Operations Center at Scott Air Force Base, Illinois. He has bachelor's degree in education from Southeast Missouri State University. He is a graduate of the Military Police Officer Basic Course, Ordnance Officer Advanced Course, Combined Logistics Officer Advanced Course, Combined Arms and Services Staff School, Command and General Staff College, Intermediate Level Education, and Support Operations Course.

Capt. James M. Beebe is a student at the Logistics Captains Career Course at Fort Lee, Virginia. He served as the brigade assistant J–4 for the 130th Engineer Brigade at Bagram Airfield, Afghanistan. He holds a bachelor's degree in English from the United States Military Academy and is a graduate of the Quartermaster Basic Officer Leader Course, Basic Airborne Course, and Aerial Delivery and Materiels Officer Course.