

# TTPs FOR EMPLOYMENT OF BRIGADE AND TASK FORCE ENGINEERS

COL JASON L. SMALLFIELD

The creation of 32 engineer battalions in the active component over the next two years and 28 engineer battalions in the National Guard over the next four years will provide maneuver commanders with an additional organic engineer capability that they have not recently possessed. The ability to leverage this additional capability, however, will require maximizing a resource that maneuver commanders have not had readily available recently — a task force engineer.

Even more than this, however, an engineer battalion commander — with lettered subordinate companies in the brigade combat team — is a muscle that neither the Army nor the Engineer Regiment has exercised in several years. The purpose of this article is to articulate what has changed, what engineer capabilities are available to a maneuver commander, and to delineate some tactics, techniques, and procedures (TTPs) that result from this analysis.

From an organizational perspective, there have been three engineer organizational trends over the past 60 years. First, the division-centric Army was re-shaped to a brigade combat team (BCT)-centric force, which will remain the key building block for our Army moving forward.<sup>1</sup> Second, maneuver brigade commanders have clamored for more engineers during combat operations, and this need has often been forgotten when post-conflict inactivations and reduced budgets have required reductions to Army end-strength and corresponding reductions in engineer force structure.<sup>2</sup> Finally,

engineer planners have generally based their organizational structures on the nature and quantity of work to be done in a given area, while Army planners have

been influenced by the dictates of deployability and unique operational requirements forcing in-lieu-of solutions to meet global demands. This trend resulted in echelon above brigade (EAB) engineer organizations who were neither available, nor optimized, to augment BCT formations.<sup>3</sup> As we build the Army of 2020, the Engineer Regiment will re-shape and optimize the remaining EAB force structure. For example, the construction force design update (FDU) is currently under evaluation at Headquarters, Department of the Army. This FDU will correct some of the “over-modularization” in the force and ensure that construction companies all have a vertical, horizontal, and survey and design capability. The goal will be the creation of multi-functional combat and construction units, designed to augment the brigade engineer battalion (BEB) and BCT while ensuring the flexibility to support unified land operations in the division and corps areas.

In 2009 and 2010, the engineer regiment developed the BEB initiative. This FDU was designed to support the two maneuver battalion BCT. By the time the BEB was approved, however, the Army decided to increase the BCT to a third maneuver battalion. The BEB did not include a third engineer company for two critical reasons. First, there was not enough EAB force structure to pay the bill; second, the Chief of Staff of the Army (CSA) limited the size of the BCT. In June 2013, CSA GEN Raymond Odierno announced the creation of a third maneuver battalion for the brigade combat team along with the establishment of a brigade engineer battalion. The engineer battalion assigned to each BCT will provide increased engineer capability, with two companies, but limited capacity to support the third maneuver battalion within the BCT. Additional engineer capacity and capability (i.e. defensive operations, engagement area development, offensive operations, expanding lodgments, stability operations, building partner capacity, defense support of civil authorities [DSCA], port construction and repair, and

*A Soldier with the 151st Route Clearance Company provides security for Soldiers as they conduct counter-IED training with Afghan soldiers on 21 February 2013.*

Photo by MAJ Brooks Little

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mission command headquarters for these EAB enablers) will need to be anticipated, requested, and allocated for home-station training, training center rotations, and support to contingency operations.

The bulk of engineer force structure currently resides in the Reserve component with 19 percent active, 31 percent Reserve, and 50 percent National Guard. Upon completion of active BEB conversion in Fiscal Year (FY) 15, the active force of 19 percent will be 48 percent BEB and 52 percent EAB. While table of organization and equipment (TO&E) organizations are generally designed and built to meet Phase III (dominate) requirements, the strategic impact of this force mix demands recurrent, assured, and predictable access to Army National Guard and Reserve units throughout all phases of the operation (shape, deter, seize the initiative, dominate, stabilize, and enable civil authority).<sup>4</sup>

From a training perspective, the Army Force Generation (ARFORGEN) model was approved by the Secretary of the Army and CSA in 2006.<sup>5</sup> ARFORGEN was the Army's process for meeting combatant commander's requirements by synchronizing the building of trained and ready units.<sup>6</sup> The underlying idea was to tap into the total strength of the Army, leveraging all active and Reserve units while sustaining the process by employing a rotational, more predictable plan for deployments.<sup>7</sup> This placed units on a tiered readiness "duty roster" and rotated units through high readiness as they prepared to deploy. This was necessary to meet wartime requirements but led to vast swings as units went from the trained/ready pool into reset. This process was exacerbated in the enabler pool since ARFORGEN was really "BCT-FORGEN." Enablers, like EAB engineers, were forced to operate at a higher operations tempo (optempo) than the supported BCT forces and were typically out of cycle with the units they would support in combat. In addition, the focus of engineer training in the 1990s was upon the broad spectrum of mobility/countermobility/survivability. This broad focus narrowed in the 2000s to be almost exclusively upon explosive hazard defeat. This has caused a degradation of 12B skill sets in other than explosive hazard defeat.

Additionally, both the CSA and the commanding general of the U.S. Army Training and Doctrine Command (TRADOC) have noted that historically the combat training centers (CTCs) have been our primary leader development training sites. The global war on terrorism, overseas contingency operations (OCO), and ARFORGEN requirements forced the Army to use the CTCs as "readiness factories" rather than their intended purpose of leader development.

From a personnel perspective, two of the most substantial engineer personnel changes involved geospatial engineers and component mix. Changes were made for geospatial engineers in order to leverage the quantum leaps in technology experienced in this area. Military occupational specialties (MOS) 81Q (terrain analyst), 81C (cartographer), and 81L (lithographer) were consolidated to 12Y (geospatial engineer). In addition, the U.S. Army Engineer School has partnered with the U.S. Army Military Intelligence School to form geospatial intelligence (GEOINT) cells (imagery analysts and geospatial engineers) at the BCT, division, and corps headquarters

levels. The other substantial change has been the migration of the Engineer Regiment from the active component to the Reserve component. Some MOSs such as 12G (quarrying specialist) are entirely in the Reserve component while the 12P (prime power production specialist) resides exclusively in the U.S. Army Corps of Engineers. The Engineer Regiment now consists of 17 enlisted MOSs, two warrant MOSs, and one officer MOS.

From the above organizational, training, and personnel information, I recommend the following TTPs for how maneuver commanders should use the engineer battalion, the assistant brigade engineer, and task force engineers.

**Mission Command.** The single most important aspect of the BEB is the mission command component. The engineer battalion commander is the brigade engineer. The battalion commander has a permanent representative assigned to the BCT staff — the assistant brigade engineer (ABE) — who is an engineer staff major. The engineer battalion commander is the senior engineer within the BCT and is the final word on all engineer-related issues. The ABE assists the brigade engineer in developing and providing recommendations to the brigade commander but should never provide engineer advice to the BCT commander without prior coordination with the brigade engineer. The key here is having the right mission command and task force engineer structure that will allow the BCT to effectively plan for, receive, employ, and then return EAB assets.

**Brigade Engineer.** Because the engineer battalion provides limited engineer capability, a BCT will likely be reinforced with varieties of unique engineer companies, an engineer battalion, or engineer brigade. This engineer reinforcement is temporary, however, and the assigned engineer battalion commander should always retain brigade engineer status for purposes of continuity and familiarity with the brigade commander and staff.

**Help Balance Command and Staff Responsibilities.** The brigade engineer and task force engineers must balance their command (engineer battalion, company, and/or platoon) and their staff (maneuver brigade or battalion) responsibilities. Over emphasis upon either responsibility may be necessary in the short term but must be avoided in the long term. Maneuver commanders should help their engineers to achieve this balance by providing up-front guidance and a specific timing and execution timeline from which the engineers can plan from in order to help achieve this balance.

**Nearly Simultaneous BCT and Engineer Battalion Operation Orders (OPORDs).** The engineer battalion should publish its battalion OPORD simultaneously (or nearly simultaneously) with the BCT OPORD. This TTP enables the engineer company commanders and platoon leaders to actively contribute to the development of maneuver battalion OPORDs rather than passively or reactively contributing.

**Collocation and Planning Cycle.** The brigade engineer and task force engineer main command posts (CPs) should be collocated and integrated into the BCT's and the task force's main CPs and planning cycles. Maneuver commanders and staff should plan for and help enable this collocation.

**Engineer Battalion Staff Reinforcement of Maneuver**

**Brigade Engineer Staff.** Maneuver commanders should think of the ABE as the engineer tactical command post (TAC) and the engineer battalion staff as the engineer main CP. The engineer battalion can, and should, reinforce the ABE for both planning and execution/battle-tracking purposes. This will also enable the simultaneous BCT and engineer battalion OPORD publication recommended above and is enabled by the collocation recommended above.

**Habitual Relationships.** Maneuver battalion and engineer unit habitual relationships are an effective means to facilitate and synchronize training within a garrison environment, especially in a resource-constrained fiscal environment. Habitual relationships, however, are not a default combat task organization. Task force commanders must expect their engineers to be task organized to other task forces depending on the main effort through the various phases of the operation. Engineers are a scarce resource on the battlefield and need to be massed at the critical point on the battlefield for greatest effect, which means that a maneuver battalion may not be allotted engineer support during an operation or during a phase of an operation. Habitual relationships need to be established and maintained down to company team level. This means that engineer squad leaders should integrate into company team planning in garrison so engineer formations can be more effectively used both in the field and in combat. Use of this TTP will help to gain mutual respect and understanding on capabilities and limitations. It will also assist planning operations at the battalion task force level by enabling more educated and informed bottom-up feedback to task force plans, which in turn will enable a more synchronized/parallel planning effort. Key, however, will be that there will be different habitual relationship solution sets for different BCTs due to having three maneuver battalions supported by only two engineer companies and three engineer platoons.

**Reserve.** Due to the limited capabilities that the engineer battalion provides to the BCT, engineers are never kept in reserve. This means that both task forces and engineer formations need to be adept at seamless and efficient task organization changes. These task organization changes, however, do not just happen. They are the by-product of detailed planning and disciplined execution.

**Focused missions.** Time is critical for engineers to shape the terrain so engineers need to be employed early and focused upon those missions that only engineers can perform. General missions such as security need to be performed by other formations.

**Combined Arms Integration.** Engineers should be integrated as a combined arms team for all operations to include offensive, defensive, and stability operations. Surprisingly, this is a lesson that we had to relearn during combat operations in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). Experience has shown that when conducting route clearance, engineer units that operated independently

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had less effect and received higher casualties than when route clearance operations were conducted as a combined arms formation and tied to a task force scheme of maneuver.

**Recon/Counter-Reconnaissance Fight.** Engineers should be integrated into the BCT's reconnaissance and counter-reconnaissance fight so as to better inform the BCT's military decision-making process (MDMP) as well as to enhance maneuver and

engineer effectiveness. The counter-IED fight in OIF and OEF can be thought of as the reconnaissance and counter-reconnaissance battle that we did not recognize as such and therefore did not fully leverage as we should have. Success or failure in reconnaissance and counter-reconnaissance has a direct causal linkage to success or failure in the main battle area.

**Expanded Capabilities.** Engineers now have survey and design as well as horizontal capability which will expand the capabilities of the BCT during expeditionary deployments. These capabilities need to be known and leveraged. In addition, every BCT will have a 120A warrant officer. These leaders will provide a level of construction expertise and an operational energy advisor that BCTs have not previously had.

In conclusion, recent history of the Army and the engineer regiment means that the engineer battalion assigned to the BCT is a muscle that has not recently been exercised and is a skill which has atrophied. This necessarily means that there is an experiential and generational gap that cannot be bridged by merely executing what we did as an Army in the 1990s. Maneuver and engineer leaders must understand what has changed along with what has not changed so that we can critically and creatively develop new TTPs for the effective use of the engineer staff and formations both organic and attached to the BCT.

## Notes

<sup>1</sup> Vincent Hodge, U.S. Army Engineer School assistant historian, "Evolution of the Engineer Force," 18 March 2003.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> Joint Publication 5-0, *Joint Operation Planning*, 11 August 2011.

<sup>5</sup> SSG Alexandra Hemmerly-Brown "ARFORGEN: Army's Deployment Cycle Aims for Predictability, 19 November 2009, <http://www.army.mil/article/30668>.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

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**COL Jason L. Smallfield** is the director of the Directorate of Training and Leader Development at the U.S. Army Engineer School at Fort Leonard Wood, Mo. He holds master's degrees from the Missouri University of Science and Technology, the U.S. Army Command and General Staff College, and the U.S. Army School of Advanced Military Studies. COL Smallfield has served as the engineer advisor to maneuver formations at the lieutenant, captain, and major ranks (maneuver battalion, brigade, and division). He is a project management professional and a certified facility manager and has received the 1999 General Douglas MacArthur Leadership Award along with the 2009 General Frederick M. Franks Award.

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