

ENGINEER MODULARITY

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At the time that the Engineer Regiment began its transformation to the Future Engineer Force structure, the United States Army was pursuing a parallel effort to transform its basic warfighting force from a division-centric force to the modular brigade combat team (BCT) force. Engineer modularity was a central linchpin that supported the transformation of that division force to the BCT force. The original premise was for those engineers who would be needed routinely to support mobility capabilities to remain as part of the BCT. All other engineer force structure capabilities would migrate to the Engineer Force Pool.

Categories of Engineer Modularity

Engineer modularity is identified by four categories:

- Embedded
- Baseline
- Mission modules
- Engineer command and control (C2)

Embedded. The embedded engineer force structure is the engineer structure organic or assigned to the BCT. The remaining three categories are part of the Engineer Force Pool.

Baseline. The baseline structure is the seven basic engineer companies:

- Sapper company (airborne, wheeled, and tracked)
- Mobility augmentation company (MAC)
- Multirole bridge company (MRBC)
- Clearance company
- Horizontal construction company
- Vertical construction company
- Engineer support company

Mission Modules. Engineer mission modules consist of the following:

- Asphalt team
- Concrete team
- Construction management section
- Engineer detachment-headquarters (canine)

- Engineer squad (canine)
- Engineer diving team
- Engineer facility detachment (EFD)
- Equipment support platoon
- Explosive hazards team (EHT)
- Explosives hazards coordination cell (EHCC)
- Firefighting team
- Headquarters and fire truck
- Forward engineer support team—main (FEST—M)
- Forward engineer support team—advance (FEST—A)
- Geospatial planning cell
- Prime power battalion
- Prime power company
- Quarry platoon
- Real estate team
- Survey and design team
- Well drilling headquarters and team
- Topographic company

Engineer Command and Control. Engineer C2 consists of the engineer battalion, headquarters and headquarters engineer brigade, and theater engineer command.

During the Army Force Generation (ARFORGEN) cycles of *reset*, *train/ready*, and *available*, the baseline force structure engineer companies are designed so that a company commander can focus on specific individual and collective tasks associated with the specific capabilities of the company. That way a sapper company can concentrate on combat engineer tasks, a MAC on assault breaching and bridging and countermobility tasks, and an MRBC on bridging. During the *train/ready* phase, the battalion commander sees that the collective tasks appropriate for an engineer mission team are trained. In effect, this creates task-organized companies capable of performing engineer missions related to specific missions.

A key factor in developing the right engineer force structure is the planner involved in the request for forces. In some cases, the planner will not be an engineer, so it is imperative that planners at all levels are familiar with the specific capabilities that each baseline or engineer mission module brings to the fight. Engineers at each level of the fight need to be able to articulate these capabilities to planners.

Sharing Lessons Learned

The Engineer Regiment's transition to a modular force is now more than 90 percent complete. That means that we are beginning to see adjustments that need to be made in our organizations, as well as changes that need to be made to the tactics, techniques, and procedures we use when employing these forces. It is essential that lessons learned from the employment of our engineer forces are captured and shared so that best practices can be incorporated into the way we train and fight.

Current doctrine is being revised to address the engineer force structure at all levels to ensure that emerging lessons learned from Iraq and Afghanistan are incorporated into our doctrine. The doctrine for employment at the BCT is published, and the doctrine for echelons above the BCT is close to being published. Engineer organizations will continue to incorporate these lessons learned while still addressing the full spectrum of engineer tasks and support to enduring operations.

There are still changes being worked for the Engineer Regiment. The prime power company and battalion have been restructured to better use prime power assets. The topographic company has been restructured to provide a required capability at all levels of the fight. There is an initiative to add a geospatial warrant officer to each of the BCTs as was done for the Stryker BCT. The MRBC is being considered for review to bring its organization in line with the other baseline company structures. The clearance company is now under consideration for a force design update incorporating lessons learned from Operations Iraqi Freedom and Enduring Freedom. There is also considerable effort at this point to restructure engineer forces within the BCTs to provide a wider range of engineer capability to BCT commanders.

There will continue to be force structure adjustments to the Engineer Regiment in the coming years. Each of these efforts will be attuned to keeping it relevant to the fight while providing the commander with the best-trained, best-organized, and best-equipped force feasible.



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