
Harnessing the Technical Span of Control

By Major Jared L. Ware

The future engineer force and modularity have increased the technical span of control for combat effects engineer battalions. “Span of control” refers to the number of subordinate units a commander must command and control; at the battalion level, that is normally three to five companies of similar capabilities. Major William G. Pierce, an engineer officer, wrote a monograph on operational span of control in 1991 while a student at the Command and General Staff College. He concluded that the military education system is the primary factor that will enable a commander to expand his span of control. This holds true today as the Regiment organizes various capabilities into its existing battalions and brigades.



Engineers from the 65th Engineer Battalion conduct geospatial analysis in a field environment.

Technical Span of Control

A former commander of the 29th Engineer Battalion (Topographic) coined the phrase “technical span of control” to explain the structure of the unit, which was topographic in name only: the battalion had a dive detachment, a transportation company, a topographic company, and a topographic planning and control element. The success of the unit truly depended on the background of leaders entering the unit and their ability to broaden their horizons by understanding the capabilities of the units through the study of doctrine and operational experience gained while assigned to the battalion.

The key question to examine as the Regiment transforms is how it will prepare future battalion and brigade

commanders to effectively lead with the increased technical span of control. Currently, there is no integrated training and education plan—or even a suggested career path—for future leaders to follow to strengthen their skill sets. Moreover, the current debate on the technical proficiency of engineer leaders suggests that the emphasis on a combat-oriented mentality has contributed to a decline in skills. That may explain part of the decline, but the increased technical span of control within combat effects battalions, with additional companies and detachments assigned to battalion flagpoles, has increased the demand for technical competency at all levels. If the Regiment fails to address this issue, the image of the Regiment could slowly erode to the point where “Essayons” is merely a catchphrase instead of our sacred creed. By taking some immediate steps, the Regiment can improve the ability of its leaders to harness their technical span of control and succeed in the engineering challenges ahead.



Military police Soldiers from the 10th Mountain Division provide rooftop security for their dismounted team during a routine inspection of a local Iraqi police station.

Training Junior Leaders

The 65th Engineer Battalion (Combat Effects) can be used to illustrate the issues associated with technical span of control because the battalion covers the combat, general, and geospatial engineering spectrums. Also, I can expound on the issue based on personal experience and empirical evidence. The battalion consists of a headquarters company, a forward support company, a geospatial planning cell, a dive detachment, a topographic company, an engineer support company, a clearance company, and an attached chemical company. The battalion will also activate a sapper company and an explosive hazards team in the near future. Understanding that it is difficult for one person to master all of these capabilities in a short amount of time, the battalion has focused on training its junior leaders on the various engineer capabilities. The goal is to introduce them to the battalion's capabilities, offer them the opportunity to serve in more than one type of unit, and expand their overall technical proficiency.

To address the increased technical span of control, the battalion has implemented an officer development and certification program to address technical proficiency

at the junior officer level. This program is a series of 65 events that cover basic officer tasks as well as tasks related to combat, construction, and geospatial engineering. The battalion commander also closely manages the officer slate to ensure that junior officers, including dive-qualified officers, can serve in more than one type of engineer unit. Field grade officers have been selected based on a mixed background in combat, construction, geospatial and/or general engineering to ensure that no "single-tracked" mentality degrades the battalion's diverse training plan. The battalion's emphasis on training and education, as well as its ability to bring in multifaceted leadership, has significantly improved its technical span of control. Moreover, it has improved the commander's ability to command, control, and direct engineer



Soldiers from the 71st Chemical Company generate smoke at Pohakuloa Training Area, Hawaii.

capabilities with greater confidence in mission success. The ability to increase the technical span of control is directly proportional to the training and education of key leaders in multiple facets of full spectrum engineering.

A doctrinal or organizational modification cannot completely alleviate the span of control gap, particularly with the modular engineer force requirements. The answer lies in the training and education of field grade and company grade officers, since they are the major decision-makers in training and equipping their units. Junior leaders must understand the limitations of the battalion headquarters and strive to become the technical experts in their respective units. The more technically qualified the leaders at the company level, the further the battalion commander can expand the battalion's technical span of control. The inverse is also true; the less technically competent the junior leaders, the smaller the technical span of control at the battalion level.

Learning engineer organizations and their capabilities requires continuous training, education, and operational experience, which will allow the Regiment to prepare its future leaders to feel comfortable with an increased technical span of control.

Future Emphasis

C*ontinuous Learning.* Expand distributed learning (dL) training and mandate its completion as an educational requirement. The Army's sister Services require engineers to obtain professional engineer designations. At a minimum, the Army could have engineer officers watch a few training videos online during the Basic Officer Leader Course, Engineer Captains Career Course, or intermediate-level learning courses and document their completion with a certificate. Review the current engineer force structure and immediately address all significant leader training shortfalls with a more robust educational package.

Expand Unit Nomenclature. Keep the headquarters table of organization and equipment structure, but expand the nomenclature, naming battalions according to their missions and subordinate capabilities, such as combat, construction, or prime power. The "effects" title is confusing, especially when there are dive teams and geospatial planning cells in the same battalion structure. Review the naming conventions and get feedback from the



Engineer from the 65th Engineer Battalion conduct demolition operations at Pohukuloa Training Area, Hawaii.

field on whether or not the current structures enhance or detract from the Regiment's image.

Feedback From Engineer Leaders. Examination of the careers of current active duty engineer brigade commanders shows that they served key leadership and staff assignment time in either combat or construction units only. Each brigade now has at least one combat effects battalion and one construction effects battalion, as well as other companies and detachments that cover the gamut of full spectrum engineering. Perhaps these leaders could share their insight on topics such as, "If I had trained in this area, or had served in this type of unit, or had received this type of education, then it would have given me a wider technical span of control."

Good venues to share ideas could be—

- The Engineer Portal (<<https://www.mwu.army.mil/portal/eng/index.php>>)
- "The Engineer Blast," published by the United States Army Corps of Engineers. For past issues, login to Army Knowledge Online (AKO) and type in <<https://www.us.army.mil/suite/folder/1066848>>.
- The Engineer Leader Technical Competency site at AKO. To gain access to the site, e-mail Captain Mark Conrad at <mark.aaron.conrad@us.army.mil>.

Major Ware is the executive officer of the 65th Engineer Battalion (Combat Effects), Schofield Barracks, Hawaii. He has served in the United States and overseas in a variety of engineer assignments. His e-mail address is <jared.ware@us.army.mil>.

This article is reprinted from the April-June 2008 issue of *Engineer*, The Professional Bulletin of Army Engineers.