

# Leadership and Technical Development in the Corps of Royal Engineers

By Colonel Andrew W. Phillips

I have been asked to write this article to support the current review of technical competence in the United States Army Engineer Regiment. In the article, I will describe the United Kingdom's (UK's) approach to developing the leadership and technical skills of the Royal Engineer (RE) officers and noncommissioned officers (NCOs), and then explain how the UK's military engineering capability is configured on operations. My purpose is not to suggest that the UK's approach is necessarily an applicable model for the U. S. Army engineers to adopt—far from it, since our history, ethos, missions, and size differ so markedly. However, I hope that by offering an alternative perspective on developing and managing engineer capability, I am able to contribute to the current debate.

## Overview of the Royal Engineers

### Key Facts

To place the article into context, it is first worth highlighting a few facts about the Royal Engineers:

- **Size.** At just under 9,000 strong, the Corps constitutes approximately 9 percent of the Army. In recent operations, however, it has comprised 15–25 percent of any deployed force, and the motto “First In, Last Out” has never been more applicable.
- **Joint Approach.** The RE mission is to provide engineer support across defense. In any deployment, the joint task

force commander has an RE advisor, as does each component commander. The level of engineer support allocated to each component is mission-dependent and is controlled at the operational level.

- **Military Engineering Focus.** In the late 1950s, UK peacetime civil works responsibilities were transferred from the Royal Engineers to a civilian agency. As a result, the Corps's primary focus over the past 50 years has been the delivery of engineer support to military operations.
- **Full-Spectrum Engineer Capability.** All RE Soldiers are multiskilled—they are Soldiers, combat engineers, and artisan tradesmen. A UK engineer battalion<sup>1</sup> therefore has the flexibility to switch from a combat engineer mission to a construction engineer mission without the requirement to reorganize or re-equip.
- **Specialist Capabilities.** The Corps has regiments that provide specialist engineer capabilities in air assault, commando, explosive ordnance disposal (EOD), search, geographic, and air support (fixed and rotary wing). Infrastructure engineering tasks at the more demanding end of the technical spectrum are undertaken by deployable works groups made up of Specialist Teams Royal Engineers (STREs).

The full-spectrum engineer capability that the Corps delivers is illustrated by the three triangles in Figure 1.

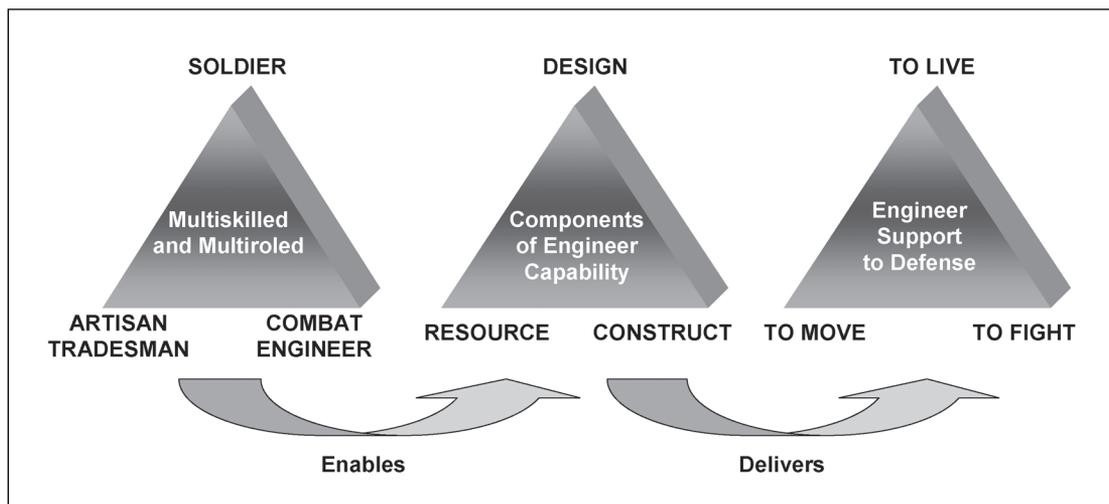


Figure 1. Full-Spectrum Engineer Capability

## Royal Engineer Officer Training

### Junior Officer Training

The RE officer intake traditionally consists of approximately 5 percent nongraduates, 35–40 percent engineer graduates, and 55–60 percent non-engineer graduates. All officers, regardless of their academic qualifications, undertake a year of officer training at the Royal Military Academy Sandhurst (RMAS), followed by the 27-week Royal Engineer Troop Commanders' Course (RETCC) at the Royal School of Military Engineering (RSME). The RETCC is designed to equip junior officers with the skills required to command an RE troop, and the course consists of the following modules:

- 11 weeks of combat engineer training that covers the reconnaissance, planning, and management of combat engineer tasks.
- 7 weeks of construction training that covers basic engineering principles, project management, and aspects of health and safety. This phase is predominantly classroom-based but includes practical elements such as temporary camp reconnaissance and the use of earthmoving equipment.
- 1 week of communications training.
- 9 weeks of command and leadership training that builds on the education received at RMAS and concludes with a 2-week confirmatory field training exercise.

### Officer Appointments

Career Stage 1 encompasses the first 10 years of an officer's career—from initial appointment to promotion to major. On completion of 18 months of initial training, junior officers normally undertake an initial tour commanding a field troop and a subsequent tour commanding a troop or platoon in the training organization. The generic junior officer career structure also includes a provision for up to 6 months of officer development (leading an adventurous training expedition or humanitarian project, for example), although operational commitments mean that few young officers are currently able to exploit such opportunities. On completion of the second junior officer tour and promotion to captain, officers normally fill either an adjutant or squadron<sup>2</sup> executive officer (XO) billet, and the officer's final tour as a captain is normally as a Grade 3 staff officer in either an engineer or all-arms headquarters.

### Command and Staff Training

Upon being selected for promotion to major and entering Career Stage 2, all officers attend the all-arms Intermediate Command and Staff Course (Land) at the UK Defence Academy. This training prepares officers for Grade 2 staff appointments and sub-unit command which, in the British Army, is a field rank appointment. Thereafter, a proportion of officers selected for promotion to lieutenant colonel (Career Stage 3) attend the Joint Advanced Command and Staff

Course in preparation for Grade 1 staff appointments and battalion-level command.

### Specialist Officer Training

The generic officer career development profile described above is applicable to all officers in the Corps, less those who undertake specialist training to provide the professionally qualified engineers that the Corps needs to sustain its infrastructure and geographic capabilities.<sup>3</sup> Annually, 12 senior captains/junior majors (representing approximately 20 percent of the total peer group for that year) are trained as chartered engineers (CEng) in either the construction or the electrical and mechanical disciplines. Professional Engineer Training (PET) lasts approximately 2 years, and the courses are broken down as follows:

- 7 months of postgraduate study at the RSME: revising principles; developing design, planning, and contractual skills; and gaining a broader knowledge of military infrastructure engineering.
- 9 months with a civilian contractor.
- 8 months with a civilian consultant.

Officers who have completed the PET course are then eligible to command an STRE (the technical sub-unit), although it is not unusual for the higher-caliber PET officers to command a mainstream sub-unit, either instead of or in addition to an STRE. Following sub-unit command, PET officers are eligible to be employed either in mainstream or technical staff appointments, but if they are promoted to lieutenant colonel on the technical roster, then they are limited to employment within the technical field for the remainder of their career. Specialist officers have the opportunity to command one of the four RE works groups, and the pinnacle of the CEng career pyramid is to command the infrastructure support engineer group—a colonel's billet.

The generic officer career model up to sub-unit command, highlighting the developmental progression achieved at each stage, is shown in Figure 2, page 20.

## Royal Engineer Soldier Training

### Initial Soldier Training

Initial training for all RE Soldiers is broken into 3 phases:

- Phase 1: 10 weeks of basic Soldier training.
- Phase 2A: 10 weeks of combat engineer training.
- Phase 2B: 6–15 months of Class 2 artisan trade training, the length of the course being dependent on the Soldier's trade.

### Follow-On Training

Having completed initial training—sometimes lasting as long as 18 months—Soldiers normally serve 3–5 years in their first unit. During this tour, they normally complete a junior

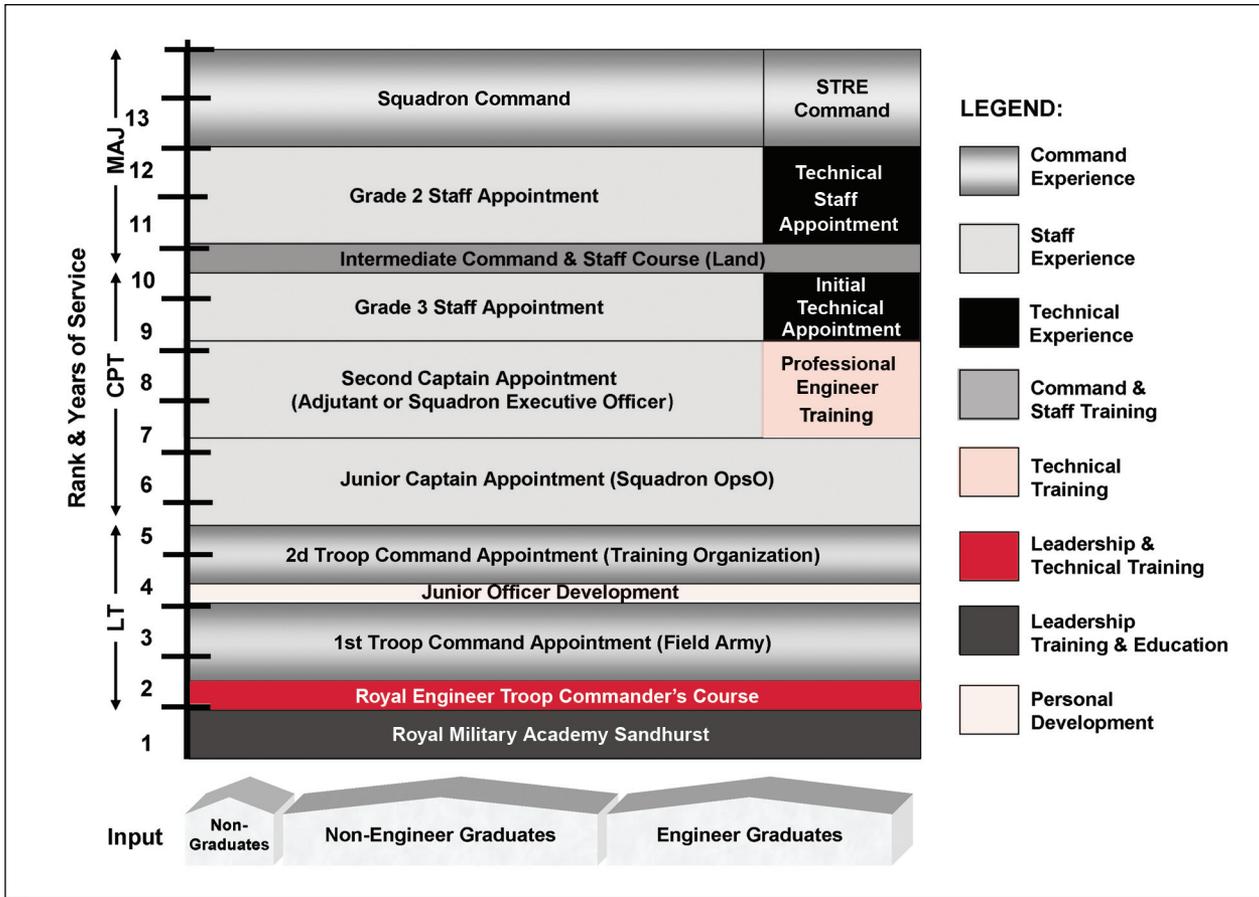


Figure 2. Generic Royal Engineer Officer Career Progression Model

NCO (JNCO) leadership cadre to determine their suitability for promotion; thereafter, they are required to complete both generic and occupational-specific command, leadership, and management courses at each stage of their career as a prerequisite for further promotion. All RE Soldiers must also gain a Class 1 artisan trade qualification and a Class 1 combat engineer qualification before being eligible for promotion to corporal. Class 1 trade courses last about 6 months, and Soldiers identified as having technical aptitude are then considered for clerk of works training.

### Clerk of Works Training

The RSME has the capacity to train up to 24 JNCOs/senior NCOs (SNCOs) per year to become clerks of works construction,<sup>4</sup> electrical, or mechanical. Clerks of works are responsible for planning and managing technical projects and for providing detailed technical advice in their specialist field. The Clerk of Works Course is just under 2 years in length and comprises 4 months of science and math, 18 months of engineering design, and a 6-week attachment to industry. All clerks of works are promoted to staff sergeant on completion of the course and have a clearly defined career path to warrant officer Class 1, with a very strong chance of commissioning thereafter.

## Engineer Support to Operations

### Close and General Support Engineering

Engineer support to a maneuver brigade is provided by a close support (CS) engineer regiment (a U.S. battalion equivalent). The regiment lives and trains with the brigade in peacetime and, in addition to commanding the unit, the commanding officer is also the brigade commander's engineer advisor. As already highlighted, a CS engineer regiment is able to provide full-spectrum support to the brigade, from high-intensity combat engineer operations at one end to CS infrastructure engineering at the other. Engineer support at the divisional level is provided by a general support (GS) engineer regiment, and all the engineer assets with the division are commanded by a Commander Royal Engineers (CRE), a colonel who is the divisional commander's engineer advisor. It is worth noting that the current configuration for engineer support (CS and GS/engineer regiment supporting a brigade) was introduced in the early 1990s when it became apparent that the existing structure, which entailed an engineer squadron (a U.S. company equivalent) supporting a brigade, was unable to deliver the level of engineer advice, or the concentration of engineer capability, required by all-arms units and formations.

## Infrastructure Support Engineering

Infrastructure engineering support to the joint force is provided by the infrastructure support engineer group. The group comprises four works groups, each of which consists of five STREs of various disciplines (materials, works, water development, bulk petroleum, utilities, water infrastructure, power infrastructure, fuels infrastructure, rail infrastructure, and port infrastructure). Although predominantly made up of active duty personnel, there is also a reserve component that provides specialist expertise in civilian infrastructure and utilities. The role of the works groups on operations is to **conduct professional and technical assessment, design, planning, and supervision of infrastructure engineering tasks**, including the use of contractors and locally employed civilians when required. This use of small, stand-alone deployable teams—combining professional engineers, technician engineers, technicians, design trades and, in certain teams, specialist trades—has proved to be highly successful in recent operations.

### Summary

Given the constraints of space, it has only been possible to give a broad overview of the capabilities of the Royal Engineers in this article, and there are some elements of the Corps's capabilities that I have not addressed at all. However, I hope that I have been able to provide an insight into the way in which the British Army develops and manages its military engineer capability and that this insight is informative in the context of the current debate. By way of conclusion, it is worth noting that the UK's recent review of future army structures has resulted in a significant increase in the size of the Royal Engineers and, furthermore, that this increase has largely been achieved at the expense of the combat arms. This clearly illustrates the value that UK Defense places on its engineer capability, and it will ensure that the Corps can continue to uphold its motto of *Ubique* (everywhere).



*Colonel Phillips is the British Liaison Officer at the United States Army Maneuver Support Center, an appointment which he took up in October 2007. Prior to this, he was the officer career manager for the Royal Engineers, and previous appointments include Commanding Officer at the Royal School of Military Engineering and Commanding Officer of the Army Technical Foundation College. He also commanded the UK's Joint EOD Force on the entry operation into Kosovo.*

---

### Endnotes

<sup>1</sup>In the British Army, an engineer battalion is designated as a "regiment."

<sup>2</sup>A UK engineer company is designated as a "squadron."

<sup>3</sup>The geographic capability will not be discussed in this article.

<sup>4</sup>The construction field also includes the discipline of military plant foreman.