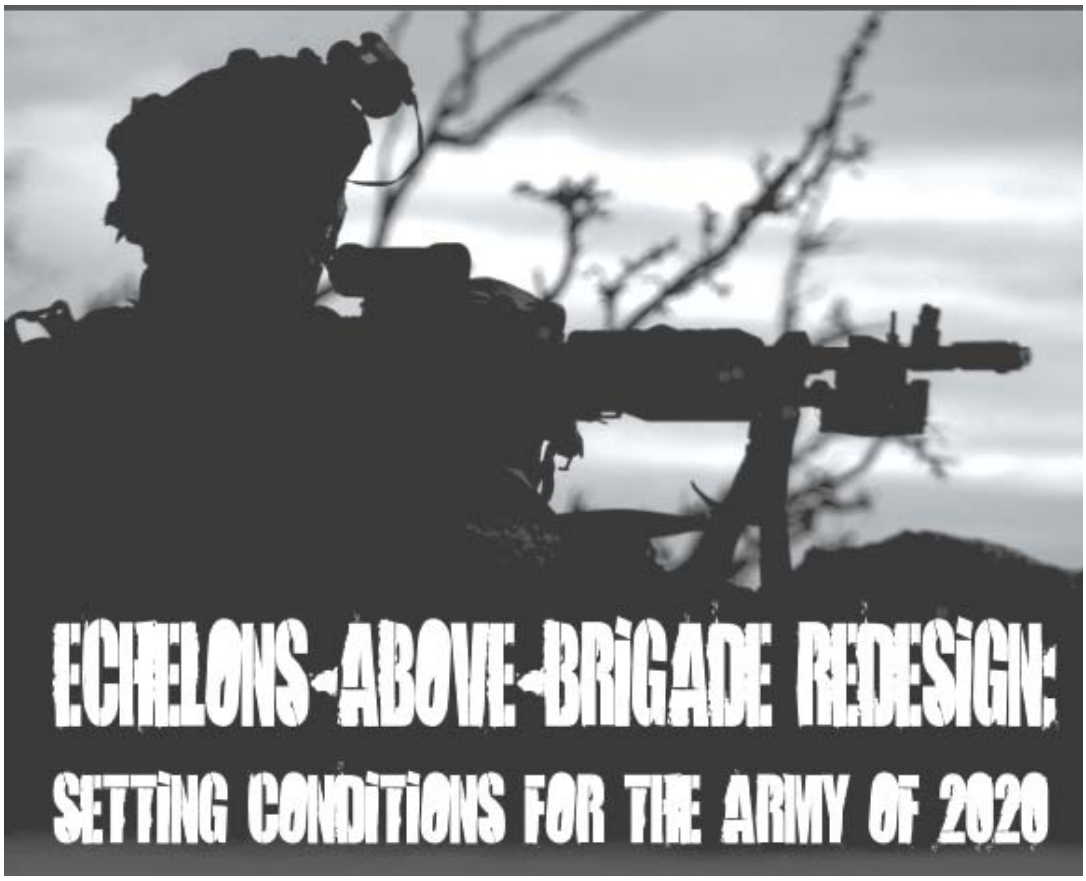

旅級以上單位重新規劃：建立陸軍 2020 年工作願景

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作者：亞當•羅斯上校
譯者：陳弘驥少校
校稿：湯恩魁上尉

At the conclusion of ENFORCE 2012, the Commandant of the U.S. Army Engineer School ordered that the Capabilities Development and Integration Directorate at the Maneuver Support Center of Excellence, Fort Leonard Wood, Missouri, examine engineer forces in echelons above brigade (EAB). With the establishment of the brigade engineer battalion (BEB) a near certainty, the challenge was to look at what formations and capabilities remained to support the developing concept of the Army of 2020. The Army of 2020, which will be predominantly based in the continental United States, requires us to look holistically at the Engineer Regiment. We must consider the capabilities that we may need and those that we may have lost in more than 10 years of stability operations using well-established key

terrain in the form of aerial ports of debarkation and seaports of debarkation. That key terrain fueled the mountains of steel that have become the American way of war. We need to look at what the “new” way of war will be and how engineers will set conditions for its success. The engineers of the Army of 2020 must—

在 2012 年工兵執行年會結論中，美國陸軍工兵學校校長裁示，由密蘇里州雷納伍德堡的戰鬥支援中心能力發展與整合室，來審視工兵部隊在旅級以上之兵力結構。隨著旅工兵營的編成，面臨的挑戰將是以何種形式及能力來持續支援陸軍 2020 年的發展構想。這個以美國本土為基礎所主導的陸軍 2020 年，需要我們將工兵團從頭到尾地檢視，我們必須想一想，我們所需要的能力是什麼?在被遺忘超過十餘年之久的維穩作戰中，那些可供人員及貨物卸載之機場與港口等建置完善之地形要點。這地形要點點燃了鋼石之山，成為美國的戰爭形態，我們必須關注未來新的戰爭形態為何；及工兵如何邁向成功，因此陸軍 2020 年之工兵部隊必須：

■ Enable the seizure, establishment, and expansion of lodgments in an immature theater.

■ Be technically and tactically capable.

■ Serve as the “Swiss Army knife” of the Army.

Everything we do in the Engineer Regiment emanates from the four lines of engineer support:

■ Assure mobility.

■ Enhance protection.

■ Enable expeditionary force projection and logistics.

■ Develop partner capacity and infrastructure.

This article highlights the role of two major formations. The BEB addresses only the first two lines of engineer support. The EAB redesign must produce formations that support all four lines of engineer support.

■在未明朗的戰場上具奪取、建立及佔領擴張領土等能力。

■具高技術與戰術能力。

■以陸軍中的「瑞士刀」自居。

我們在工兵團所做的每件事都源自工兵支援的四個層面開始：

■確保機動力。

■提升防護力。

■確保遠征軍兵力投射及後勤維保。

■發展友軍夥伴能力與公共建設。

這篇文章著重兩個主要形式的角色，旅工兵營僅著墨上述前兩項工兵支援層面，旅級以上部隊重新規劃必須產生上述四項工兵支援層面的形式。

BEB

When the BEB is finally implemented, it will provide critical mobility, countermobility, and survivability capabilities at the point of need in support of the maneuver commander. While there will be very little vertical construction capability in the BEB modified table of organization and equipment, there are many opportunities for developing that capability:

- The BEB will serve as a mission command structure capable of assuming numerous EAB units, including construction forces.
- Echoing the Engineer School Commandant's desire to have no "single-purpose engineer forces," the combat engineers who make up the majority of the BEB may be required to develop basic construction skills above the level of erecting a HESCO® bastion.
- The BEB will include an engineer construction technician who can provide in-house training for BEB personnel and provide design capability, quality control, and electrical power management.
- The BEB may also cross-train with other construction forces with which it habitually associates. Now that the BEB is becoming a reality, we look toward the types of units and capabilities that are required to provide the maneuver commander with solutions to problems at the point of need that span the combat, construction, and geospatial engineering disciplines.

旅工兵營

當以旅工兵營來執行任務，可依需求提供戰鬥部隊指揮官主要機動力、反機動力及戰場生存能力之支援，然而在旅工兵營的修訂後編裝表內將大大降低垂直工程建設能力，以下提供發展此能力的建議：

■旅工兵營在任務式指揮架構中可假定為數個旅級以上單位，包括工程部隊。

■回應工兵學校校長企圖「無單一功能之工兵部隊」，戰鬥工兵組成大部分的旅工兵營，可能需要發展建造 HESCO 堡壘以上等級的基礎建築技術。

■旅工兵營將編制一個工程工兵技術人員，提供旅工兵營人員室內訓練，並提供設計能力、品質管制及電力系統管理。

■旅工兵營亦可與其他工程部隊實施交互訓練，使其慣於相互交流。現在旅工兵營已將付諸實行，我們朝單位的種類與能力看齊，使其可提供演習指揮官在需求點上解決問題的需求，以延續戰鬥、工程與地理空間的工兵訓練。

EAB Redesign Community of Practice

The members of the EAB redesign initiative formed a community of practice across all three components: Regular Army, Army National Guard, and U.S. Army Reserve. It included representatives from the Joint Staff and the staffs of Department of the Army, U.S. Army Forces Command, U.S. Army Training and Doctrine Command, all Army service component commands (ASCCs), U.S. Army Corps of Engineers, National Guard Bureau, U.S. Army Reserve Command, and anyone who wanted to share in the stewardship of the Engineer Regiment.

旅級以上單位重新規劃之執行編組

旅級以上單位重新規劃之成員，最初是以執行編組方式組成，跨越三個兵種：常備陸軍、國民兵及後備部隊。其中包含聯合參謀、陸軍部參謀、美國陸軍部隊指揮部、美國陸軍訓練暨準則指揮部、所有陸軍勤務單位指揮部、美國陸軍工程兵團、國民兵局、美國陸軍後備指揮部代表及任何想要參與的工兵團主管人員。

The community of practice is informed by the concepts of gaining and maintaining access and sea basing and by the results of the Unified Quest series of exercises such as AirSea Battle, sponsored by U.S. Army Training and Doctrine Command’s Army Capabilities Integration Center. It also considers the emerging lessons learned and insights that fuel new Army trends such as the Army capstone operating concepts. The community of practice has met regularly via teleconference and in person since ENFORCE, has been studying the broad requirements of the maneuver commander in the Army of 2020, and has been ensuring that the Engineer School Campaign Plan and all EAB redesign concepts are fully nested within those Army and joint concepts.

執行編組是透過獲管存取與海外基地之概念，以及演習系列中之統一請求成果來告知，像是海空戰鬥，係由美國訓練暨準則指揮部陸軍能力整合中心所發起之演習。這也被視為是整合課程學習及觀察，可激發新陸軍趨勢，像是陸軍頂石作戰構想。自工兵執行年會以來，執行編組常透過視訊會議及親臨與會方式碰面，討論陸軍 2020 年演習指揮官所需之各項需求，確保工兵學校行動準據及所有旅級以上單位重新規劃之構想與陸軍及聯合作戰構想完全吻合。

Community of Practice Goals and Initiative

The goal of the community of practice is to inform the Total Army Analysis process that addresses fiscal year (FY) 2016–2020 by gathering views from the field about what will be needed to support the expeditionary Army of 2020. The Army has set benchmarks which will lead to restructuring objectives by FY 20. The community of practice is closely following those timelines to provide realtime inputs to the process. Membership in the community is very simple; interested stewards of the Engineer Regiment should contact the author at adam.s.roth2.mil@mail.mil to materially contribute. The major initiatives that the EAB redesign community of practice is now working on to inform the FY 15–19 Total Army Analysis are as follows:

執行編組之目標與方案

執行編組的目標是藉由整合有關 2020 年陸軍遠征軍野戰支援上之需求觀點，實施全陸軍分析過程報告，並發表於 2016-2020 會計年度的講演。陸軍已設定了基準，這將會使得 2020 會計年度目標重建，執行編組依這些時間線，把實際時間輸入至整個過程中。成員非常簡單，只要有興趣的工兵團幹部皆可聯繫作者(adam.s.roth2.mil@mail.mil)提供實質上之意見。執行編組中之旅級以上單位重新規劃，其主要的方案現在正著手進行中，在整體陸軍 2015-2019 會計年度分析如後：

■ Engineer Construction Company. A seminar in July evaluated numerous courses of action to get a more versatile company that combined vertical and horizontal capabilities. One potential solution, with a mixture of light and heavy, vertical and horizontal platoons, would allow predominantly horizontal engineer support for the lodgment and vertical support for later phases. The results of a survey conducted

earlier this year will fuel the next force design update (FDU), coming in FY 13.
■工兵工程連：在七月份的研討會中，評估許多行動方案來得到一個具更多功能的連隊，其結合了水平與垂直的工程能力，其中一個可能的解決方案是將工兵輕重機械、垂直與水平工程排混編，使水平工兵支援營舍，垂直工兵支援後續階段。更早之前的所執行的一篇調查報告結果，將會在 2013 年會計年度來時，啟動下一階段的兵力調整。

■ Special Operations Forces Engineer Support Squadron. The Engineer School Commandant said during ENFORCE that special operations forces will remain as the "11th Army division" in contact for the next generation. With the pending reduction in U.S. Navy construction battalions and the loss of overseas contingency operations funds, the community of practice and the special operations forces community are developing a concept unit that would be employed in ways similar to the 249th Engineer Battalion (Prime Power). It would have linkages at the ASCC level for tailored force packages of highly skilled, cross-trained, and credentialed engineer Soldiers who are able to engage in the full range of military operations. The Capability Development and Integration Directorate at the Maneuver Support Center of Excellence is cooperating in the unit's development, and the concept of the interdependence of special operations and conventional forces remains a driving force for this emerging capability.
■特戰部隊工兵支援大隊：在工兵執行年期間，工兵學校校長表示，特戰部隊將維持為「陸軍第 11 師」以銜接下一個世代。隨著美國海軍工程營即將裁減，執行編組及特戰部隊編組發展出一個概念性的單位，將從事與 249 工兵營(供應主要電力)類似之工作，其將可以與陸軍勤務單位指揮部層級產生連結，這些高專長、交互訓練及認證工兵士兵，可從事全方位之軍事作戰。戰鬥支援中心之能力發展與整合處協力單位發展工作，特戰與正規部隊間之相輔相成理念，依然是這新興能力的領頭羊。

■Geospatial Planning Cell (GPC) Redesign.

There are currently not enough GPCs for every ASCC element, and the community of practice is finishing what will become an FDU to provide geospatial capability at every ASCC and ensure that key geospatial engineer and geospatial

engineering technician leadership is available to mission command nodes. It will also ensure career progression within the GPCs. The contribution of geospatial intelligence to the joint force commander remains a critical capability that sets conditions for all phases of operations by special operations and conventional forces. The community of practice is studying ways to provide that critical capability at the point of need.

地理空間計畫小組重新規劃

目前沒有足夠的地理空間計畫小組提供給每個陸軍勤務單位指揮部，執行編組也正完成兵力調整，來提供給每個陸軍勤務單位指揮部地理空間能力，確保主要的地理空間工兵及地理空間工兵技術領導人員，在任務指揮節點上有足夠能量，這也將確保地理空間計畫小組內人員的職業發展。地理空間情報對於聯合部隊指揮者而言，仍然是一個非常關鍵的能力，可在特戰及正規部隊之前，先完成各階段的作戰狀況假定，執行編組正研究各種方式來提供各需求點上的關鍵能力。

■Early Entry and Setting the Theater.

A key area for discussion and development by the community of practice is determining early-entry and forcible-entry capabilities that support amphibious (littoral) and vertical (airborne/ air assault) maneuver to secure a lodgment and to support the expeditionary Army of 2020. A strategic partnership with the U.S. Army Transportation School is being formed to support this initiative, and Engineer School leaders attended a joint logistics over-the-shore exercise at Fort Story, Virginia, in late August 2012. Key lessons learned from that training event, coupled with numerous video teleconferences, will drive the true requirements and capabilities determination process, which will affect the complexion of EAB and BEB forces. Few have had the opportunity to conduct training or real operations in these areas since the start of the War on Terrorism. The Engineer Regiment needs to recoup institutional knowledge, including historical studies. This is where readers can make their most significant contributions.

早期進入及設置戰場

執行編組需要被討論與發展的主要地方，在於決定早期進入及強制進入之能力，來支援兩棲(灘岸)及垂直(空降/機降)行動，確保佔領地區及支援陸軍

2020 年遠征軍。美國陸軍運輸學校的一個戰略上的夥伴，正被編成來支援此方案，此外工兵學校幹部們在 2012 年 8 月下旬，在維吉尼亞史托里堡參加聯合後勤灘岸演習，訓練主題中伴隨許多視訊會議、從中學習實際需求與能力決策之程序，這將影響到旅級以上及旅工兵營部隊現況，少部分單位有機會在反恐戰爭開始時，在這些地區來執行訓練或實戰，工兵團需要恢復通識課程，包含歷史研讀，這是最可以顯現讀者貢獻的地方。

■Regular Army/Reserve Component Roles and Integration.

By FY 18, the Engineer Regiment will be composed of 19 percent Regular Army and 81 percent Reserve Component Soldiers. The first order of business for the community of practice will be to answer the questions:

■常備陸軍/後備部隊的角色與整合。

在會計年度 2018 年之前，工兵團將會由 19%的常備陸軍及 81%的後備兵組成，執行編組的碰到的第一個命令將會是要回答以下問題：

What must be done? and Who will do it? The term *operational reserve* takes on significance when speaking of the EAB engineer force. The community of practice will examine how to keep the Reserve Component operational and relevant to these plans and concepts and will do so against the backdrop of declining fiscal resources. The Army Reserve Engineer General Officer Steering Committee, the Army National Guard Engineer Advisory Team, and the combined Chief of Engineers Reserve Component Engineer Council are partners in determining how the Reserve Component will remain relevant and ready to sustain Engineer Regimental requirements supporting the Army of 2020. Starting in FY 13, the community of practice will continue with additional initiatives, all in support of the FY 16–20 Total Army Analysis:

什麼事情一定要做?由誰來做?當談到旅級以上的工兵部隊時，*作戰儲備物資*這一詞顯得格外重要。執行編組將驗證如何使後備單位保持作戰狀態，這些相關的計畫與構想其實與逐年遞減的會計資源現況相違背。陸軍後備工兵將領指導委員會、陸軍國民兵工兵顧問團及聯合工兵後備單位工兵諮詢長，都是在決議後備單位在未來陸軍 2020 年中，如何去蕪存菁，維持工兵團的支援需求。2013 會計年度開始後，執行編組將賡續提出方案來支持 2016-2020 會計年度全

陸軍分析：

■**Combat Company FDU.** The key determinant of this update will be what items are actually approved in the BEB modified table of organization and equipment. Realizing that the strengths of the BEB lie in mobility, countermobility, and survivability, a definitive gap analysis can determine what reinforcement may be required. That analysis will consider capability and capacity by the addition of EAB engineer units for the tactical fight and for requirements that potentially set the theater as well.

戰鬥連隊兵力升級。升級的主要決定因素在於哪些項目在旅工兵營的修訂後編裝表內實際被認可，我們都瞭解，旅工兵營的戰力端賴機動力、反機動力及戰場生存力，最後的差距分析可決定該強化什麼，分析成果將會考量旅級以上之工兵單位，在戰技戰鬥及設定戰場空間之潛在需求之能力與能量。

■**EAB Engineer Battalion FDU.** Critical to this discussion will be whether the Army of 2020 requires solepurpose battalions (combat or construction) or multifunctional battalions at EAB. An additional concern is whether the reversal of modularization (the return of A, B, and C companies) might also serve to habituate engineer support and provide a more stable platform for mentoring. Working hand in hand with logistics and joint partners, these EAB battalions will probably be critical in future plans for setting the theater and for early-entry operations. The other question that must be considered is “How will this battalion be effective across the entire range of military operations, such as supporting theater security cooperation in Phase Zero, supporting the initial fight in Phases 2 and 3, and also supporting the transition to stability operations in Phase 4 and beyond?”

■旅級以上工兵營之兵力升級。主要討論的議題是陸軍 2020 年是否還需要單一功能之工兵營(戰鬥或工程)或旅級以上之多功能工兵營，另外關注的是模組化部隊之轉換(A、B、C 連的回歸)是否也能習慣工兵之支援及提供一個更穩定的諮詢平台。與後勤及聯合夥伴齊手工作，這些旅級以上之工兵營將可能在未來計畫中，對於設置戰場環境與早期進入顯得格外重要；另外一個要思考的問題是“這個營將如何有效地跨越所有陸軍作戰範圍，像是在起始階段時支援戰場安全之協調，在第二、三階段支援初期作戰，同時也在第四階段及爾後階段支援

維穩作戰之轉換?”

■**Urban Search-and-Rescue Concept Plan.** The Engineer School has assumed proponency for this unique capability. Units such as the 911th Engineer Company and numerous formations under Defense Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Response Force and the Homeland Response Force rely on this capability. The Engineer School and the Maneuver Support Center of Excellence continue to define requirements and conduct experiments across the doctrine, organization, training, materiel, leadership and education, personnel, and facilities domain, moving this capability toward institutionalization.
城鎮搜救計畫構想。工兵學校對於這獨特之能力已有所提議，像是第 911 工兵連、化生放核防護部隊、高效益爆裂物反應部隊及國土反應部隊都仰賴此能力，工兵學校及戰鬥支援中心持續在準則、組織、訓練、軍品、領導及教育、人事、設施領域等確立需求，並執行實驗來將這項能力制度化。

■**Concept Plan for Contingency Basing Management and Operations.** This will serve as the focus for many evolving concepts that include operational energy; base camp development, expansion, and closure; and the Contingency Basing Integration Technology Evaluation Center. Lessons learned from Operation Enduring Freedom and Army level forums are fueling the discussion about integrating and institutionalizing these concepts. The more that these concepts are integrated, the less need there will be for a logistics-intensive tail for the expeditionary Army of 2020, which will be forced to operate efficiently in austere environments.
■**應變基地管理與作戰計畫構想**。這對於許多逐漸發展的構想是很重要的，包含作戰能量、基地發展、擴展及關閉，以及應變基地整合技術評估中心。從耐久自由作戰及陸軍階層研討會都開始討論將這概念的整合與制度化，越多的概念整合，陸軍 2020 年的遠征隊所需要的後勤輜重將會越低，在嚴苛的環境下作戰更有效率。

■**Theater Engineer Command (TEC) Redesign.** The TEC, currently the highest echelon of mission command in the Engineer Regiment, requires reevaluation. The TECs (including their subordinate, deployable command posts) have not been used as

intended since the start of Operation Iraqi Freedom. Also, the TEC structure has focused more on mission command and less on technical competence, which had been an engineer strength. The TEC redesign will examine ways to restore technical competence, incorporate all Army components into this unique and critical asset, and look at including joint equities, perhaps by creating a joint TEC. Most importantly, it will seek to create a unit that will be deployed and employed.

■戰場工兵指揮部重新規劃。戰場工兵指揮部是目前工兵團任務式指揮中最高階層，需要從新評估。戰場工兵指揮部(包含其下屬單位及機動指揮所)在伊拉克自由作戰開始時並未善加利用，此外戰場工兵指揮部架構太著重於任務式指揮而忽略技術職能，這是工兵的一項戰力。戰場工兵指揮部重新規劃將可測試多樣方式來恢復技術職能，合併陸軍各單位成為獨一無二且重要的資產，也可能創造出聯合戰場工兵指揮部，更重要的是，這將創造一個兼具部署與運用的單位。

Summary

The EAB redesign and the community of practice are initiatives that have been well-supported by the field. This article is meant to provide a status report on how far the initiatives have progressed and to solicit support from anyone who has not yet had the opportunity to contribute. We are bound only by the passion of the Engineer Regiment members to create the most responsive formations to support the maneuver commander at the point of need. As always, the author welcomes vociferous debate. Colonel Roth serves as the deputy assistant commandant (Army Reserve) at the U.S. Army Engineer School. Before graduating from the U.S. Army War College, he served as the commander of the 844th Engineer Battalion and deployed to Iraq as part of Task Force Sky. He is a graduate of the U.S. Army Command and General Staff College and holds a master’s degree in mechanical engineering from Boston University.

總結

旅級以上單位重新規劃及執行編組等方案已經在戰場上提供良好支援，這篇文章是想要提供一個現況報告，看這方案會延續多久，以及尋求那些還沒有機會貢獻人們的支持，我們僅能藉由工兵團成員們的熱情來創造更多回響，在需求點上支持演習指揮官，作者永遠歡迎各位參與辯論。羅斯上校為美國工兵學

校副助理校長(陸軍後備)，在美國戰爭學院畢業前，他是第 844 工兵營營長，駐軍於伊拉克，為航空特遣隊之一部，他現在是美國指參學院的研究生，同時已擁有波士頓大學機械工程碩士學位。