



Joint Logistics Over-the-Shore camp comprised of Naval Support Element, Army Task Force 24, and Marine Corps 4<sup>th</sup> Landing Support Battalion Charlie Company participates in cooperative training exercise involving Moroccan military and 14<sup>th</sup> Marine Regiment in execution of ship to shore movement of cargo and equipment during Exercise African Lion 2011 (U.S. Navy/Jonathan Pankau)

# Joint Engineers Launch New Knowledge-Based Management Program

By Brian E. Griffin

After more than 3 years in development, the Joint Staff Logistics Directorate will field its first joint engineering computer application: the Joint Engineer Common

---

Colonel Brian E. Griffin, USA, Ph.D., is Deputy Division Chief of the J4 Engineering Division on the Joint Staff.

Operating Picture (JECOP). Its purpose is to aid combatant command and Service engineers with steady-state planning, programming, and the synchronization of engineer efforts for worldwide military operations. The JECOP portal serves as a collaborative knowledge management tool that depicts network information on a map

in order for end-users to quickly gather and analyze location data for a variety of purposes including data summary, trend analysis, infrastructure planning, and decision support. The portal also provides users access to real-time authoritative data linked to strategic direction via map-based displays and user-defined views.



Soldier assigned to 331<sup>st</sup> Transportation Company locks in portion of Trident pier during Combined/Joint Logistics Over-the-Shore naval exercise on Korean Peninsula, April 15, 2013, intended to improve logistics interoperability, communication, and cooperation between the United States and South Korea (U.S. Navy/Elisandro T. Diaz)

## Background

The concept for JECOP grew out of the recommendations from an Engineer Capability Assessment, which identified a competency gap in knowledge management. This was attributable to stove-piped legacy information systems, lack of fused visibility and limited access, inability to present a common picture, and limited decisionmaking

tools for joint engineers to manage activities and events within their respective areas of responsibility. In an effort to address this capability gap, the Joint Operational Engineer Board authorized the development of a common operating picture to support the combatant commanders' theater campaign plan in December 2012. This decision represented a change in approach from

spending a significant amount of time and resources on rewriting a specialized contingency planning module, such as the Joint Engineer Planning and Execution System (JEPES). However, JEPES will not go away. Instead, the rewrite of the JEPES module will become the second phase of this development effort. The JEPES module and JECOP portal will complement one another. In short, JECOP is a steady-state planning tool, and JEPES will continue to be a contingency planning and execution module within Global Combat Support System-Joint.

## Strategic Concept

JECOP can be used to improve the transfer of knowledge by leveraging visualization methods to produce a shared understanding of requirements and the operational environment. It performs deductions and helps facilitate action, and its system architecture is designed to enable collaboration among widely separated planners at all command echelons. The JECOP portal is not a database. As such, it will not serve as a repository of execution information or an asset management, scheduling, or accounting tool. While JECOP may support deliberate or crisis action planning processes, it does not have the sufficient detail to build products such as a time-phased force and deployment data. Instead, the JECOP portal serves as a program of record designed to pull data from multiple databases and produce results much faster, more detailed, and more accurate than using spreadsheet software or with a stubby pencil and calculator using planning factors. In doing so, JECOP provides authorized users a comprehensive, up-to-date picture of U.S. engineering activities and events worldwide.

So how does JECOP work? Engineer capabilities enable joint operations by facilitating freedom of action necessary for the joint force commander to meet mission objectives. During steady-state operations, engineers primarily focus on preparing the operational environment to receive large numbers of forces for future joint operations. Some examples of joint

engineering include the improvement of infrastructure, environmental and energy considerations, exercise-related construction, humanitarian and civil assistance projects, the construction of bases, and other support to ongoing joint and multinational operations. A majority of these projects are managed by U.S. Army Corps of Engineers, Naval Facilities Engineering Command, and Air Force Civil Engineer Center, and then stored in their historical archives. JECOP pulls relevant data from the Services' databases and other open source data sets, then translates the project addresses into geo-coordinates on a map. The JECOP portal uses a simple icon to denote engineer construction efforts across the command. In addition to displaying data on a map, JECOP aims to link requirements found in the theater campaign plans (TCPs) that support combatant commanders' long-term vision of their areas of responsibility. Commanders use their TCP to synchronize activities along complementary lines of effort to allocate resources and assess progress toward achieving the endstate.

Besides connecting activities to objectives, JECOP aids commanders and their engineering staff to achieve a shared common understanding of the operational environment. Within the TCP, the theater posture plan provides an important link to the resources necessary to implement a commander's strategy. The plan is comprised of three elements: forces, footprints, and agreements—all essential to supporting current operations, security cooperation, and other steady-state activities. Commanders rely on well-placed footprints, which consist of basing, facilities, infrastructure, and prepositioned equipment, to enable operational reach, flexibility, and depth throughout their areas of responsibility. In support of steady-state planning, joint engineers must acquire knowledge of critical terrain information such as runway dimensions at potential aerial ports of debarkation or the harbor depths at potential sea ports of debarkation to support the future movement of forces. A majority of this information can be found on open source Web sites. The JECOP portal facilitates the transfer of knowledge by displaying



Soldier assigned to 331<sup>st</sup> Transportation Company works to bring last sections of Trident causeway together during Combined Joint Logistics Over-the-Shore military exercise on the Korean Peninsula, April 18–28, 2013 (U.S. Navy/Anthony R. Hayes)

critical information against the operational environment that enables joint engineering staffs to arrange disparate facts into a logical and understandable construct. So, for example, a senior leader may ask the engineering staff to update a staff estimate in country  $x$ . By displaying basic information on a map coupled with critical information requirements, JECOP serves as a starting point of reference for joint engineers to use their intuition to identify candidate actions and elements of operational risk, as well as develop solutions. This capability can help significantly reduce the options to a few core scenarios that can be further analyzed to derive a recommendation.

The smart directory structure displays time, geography, funding type, execution method, cost, and other resources to allow the users to dynamically choose which groups of information to display. When more detailed information is required, a link is provided to take the user to the appropriate database. Another benefit of the smart directory is the ability to communicate a shared vision among stakeholders. For example, JECOP provides the combatant command the ability to time phase specific engineering activities and events associated with the development of site  $x$  over the course of 3, 5, or 10 years. Access

to this knowledge allows Service engineers to engage combatant command engineers early in the master planning processes to identify resourcing requirements and inform respective Service personnel operations and maintenance and budget submission. Additionally, the smart directory provides Active, Reserve, and National Guard engineers with the tools to view potential construction projects in each combatant command that may be ideal for troop construction projects using a multi-component engineer approach in support of command initiatives.

An essential challenge for joint engineers in the future is to meet increasingly demanding logistics requirements with constrained resources during steady-state operations. Knowledge management is a way to close the information gap and gain a greater understanding of the existing environment because it facilitates and accelerates processes in a resource-constrained environment. The JECOP portal is the first step in creating an engineer-centric, knowledge-based network where everyone benefits from information-sharing. Embracing JECOP presents an opportunity for the engineer community to build a collaborative, innovative, and knowledge-sharing culture. JFQ