

Conclusion

Operation DESERT STORM ended on 28 February after Iraqi troops pulled out of Kuwait. Cease-fire talks began at Safwan, Iraq, on 3 March, and shortly after that the first Army troops began redeploying. In the months following the cease-fire, as it completed its missions in support of redeployment, the Corps began phasing out its operations in Dhahran. As he left Dhahran, Colonel Cox had high praise for his staff and for the hundreds of Corps members back in the United States who had provided support. "The success of Desert Shield and Desert Storm," he wrote, "resulted from a total team effort, the best I've ever seen."¹

The Corps ultimately performed \$298.7 million worth of construction of base camps, sanitation facilities, airfield pavements, roads, bridges, warehouses, wash racks, hardstands, sunshades, other troop support facilities, and equipment leasing. Of the \$298.7 million, \$8.7 million was paid with military construction funds, \$33.4 million with Army operation and maintenance funds, \$37 million from the Gulf Peace Fund, and \$219.6 million with Saudi funds.²

Engineer Deployment

Operation DESERT SHIELD/DESERT STORM highlighted the need to deploy engineer planners early in contingencies. Military leaders in the United States found that they could not "push" engineers into the theater. Rather, they had to wait for the maneuver commanders to request engineers. In the first weeks of the operation, there were no engineer planners in Saudi Arabia who could determine valid engineer requirements and make them known to the maneuver commanders or identify needed engineer resources and initiate requirements for Class IV construction materials.

Engineers need to be brought into the theater early, General Storat concluded, to aggressively affect theater-level planning. Because of the delays in deploying engineers, Storat's command had to plan and design projects as they constructed them, which caused some confusion. The planning was backwards in the sense that Storat's unit had to first find out what real estate and materials were available before they could begin design work.³

Combat engineers were also late in deploying although there was an immediate need to prepare the area for the maneuver force—particularly building roads and grading tent sites. Engineer leaders repeatedly complained that there were not enough engineers in the theater to bed down and sustain the maneuver force.

Colonel Braden recommended that in future contingencies in austere theaters, the Army deploy engineers for tasks at echelons above corps concurrently with maneuver forces. He suggested that the Army identify an

early-deploying “package” at echelons above corps to provide facilities for the soldiers. The Joint Staff’s engineer, Air Force Colonel James E. Jenkins, agreed. The Air Force, he noted, had organic Prime BEEF teams for its forces and the Navy provided organic Seabee battalions to support the Marine Expeditionary Force. But the Army had no troop construction capability in the theater during the initial phase. As a result, combat engineer battalions were diverted from operational and training missions. Jenkins recommended that the Army have a combat support element organic to the deploying engineer force. The Army needed to identify organic construction assets in its engineer force for deliberate support of the contingency.⁴

Although military leaders agreed on the need to deploy engineers early and pre-position engineer equipment, they were also pragmatic. Combat engineers, they conceded, would probably never receive priority for deployment because of other pressing needs. “Tanks,” Pagonis explained, “will always be put on the ships first.”⁵ A theater commander will always have to balance the various requirements in a theater of operations—keeping in mind the limitations of available transportation.

Mobility

The war not only highlighted the need to deploy combat engineers early, it also demonstrated that combat engineers needed greater mobility. The 43d Engineer Battalion had difficulty moving to King Khalid Military City, a distance of more than 250 miles. It took nearly a month to get all the equipment from the battalion and its supporting companies out to their job sites. General Storat argued that combat heavy battalions need to become more mobile so they can keep up with fast-paced construction activities, even at echelons above corps. Army commanders also found that combat heavy battalions did not have enough horizontal construction capability.⁶

Use of Contractors

Faced with a shortage of engineer troops and equipment, military leaders turned to contractors. Pagonis and other commanders quickly discovered that contracting was a “logistics force multiplier.” Yet, contracting brought its own problems. Commanders found they could not always rely on contractors when hostilities began, and the contracting system lacked flexibility. “Contracting support can provide long-term requirements,” Colonel Carroll observed, “but is very difficult in responding to immediate requirements, short-term requirements—and does not respond to a changing situation.” For example, ARCENT contracted for six life support areas and for helipads and heliports when units were concentrated along Saudi Arabia’s eastern corridor. Then when VII Corps arrived, ARCENT repositioned the forces for an offensive action. Contractors who had just begun work could not respond to the change. They finished facilities that were unused or abandoned. Senior engineers agreed

that contractors were a valuable and sometimes essential means of supplementing troop construction, but they should and could not replace troops.⁷

Funding

The Persian Gulf War also revealed that U.S. contracting and funding regulations could create serious problems during contingencies. Pagonis called some of the funding authorization levels "ludicrous." Corps personnel found that the existing federal acquisition regulations were too restrictive, hampering their ability to award contracts. Colonel Cox recommended having waivers in place or at least a list of needed waivers before the contingency occurred.⁸

Funding mechanisms for new construction projects were too restrictive, Braden argued, and limited the theater commander's options. Construction projects that cost more than \$200,000 could not be easily funded. If the Saudis and Japanese had not paid for most large projects, the United States would have had to reprogram more than \$600 million in military construction funds under Title 10, U.S. Code, Section 2808. Both Braden and Jenkins recommended that Congress amend Section 2805 to allow for unlimited use of operation and maintenance funds for new construction during contingencies and amend Section 2808 to give the theater commander approval authority up to some agreed upon limit.

Jenkins recommended that the Secretary of Defense's staff address the issue of contingency construction so the theater commander, services, Joint Staff, and Secretary of Defense would not have to reinvent the procedures during each contingency. If the Defense Department did not get authority to construct facilities using operation and maintenance funds, Jenkins observed, it would need to establish procedures that would work in all contingencies and push for limited approval authority for the unified commanders.⁹

Support from Other Nations

The shortage of engineer troops and the funding restrictions made support from the governments of Saudi Arabia and Japan critical. After the war, General Schwarzkopf wrote, "had it not been for the Japanese, DESERT SHIELD would have gone broke in August."¹⁰

Without host nation support and the Gulf Peace Fund, the Defense Department's ability to support its troops would have been significantly impaired. Yet, host nation contracting and funding procedures were cumbersome. Although host nation support saved the United States money, it sometimes delayed projects. "By and large, the use of Saudi funds to acquire Class IV and other materials, while saving us money, in fact cost us time," General Storat observed, "and in a theater that moved as rapidly as we did...you can make a case that time was more valuable than the money in many instances."

The Gulf Peace Fund procedures were often more responsive than host nation support. "In the absence of engineer troops, or to conserve engineer effort for forward area battlefield tasks, the hiring of a major international contractor on a cost-plus-fixed-fee basis provides an extraordinary benefit," Colonel Braden concluded. "Using Bechtel for assistance in kind construction provided responsive and professional support to the forces beyond what could have been conceivably provided by U.S. troop engineers."¹¹

The Saudis, who tended to be careful and methodical in their dealings, understandably felt overwhelmed by the scope and urgency of the U.S. requirements. The U.S. military "pounded" Saudi officials with requirements, Colonel Miller observed, and they proved to be generous hosts. They opened all of their facilities to U.S. forces—the Port of Jeddah, the airfield at Dhahran, and King Fahd International Airport. U.S. forces extensively used King Khalid Military City, which the Corps had built in the 1970s and 1980s. The Saudis tolerated a tremendous cultural impact and depletion of their financial resources. They sometimes felt that the United States was placing unnecessary requirements on them. The United States asked them to build facilities that were never used because the war ended so quickly. Despite the occasional strains between the two nations, the bond of mutual trust was maintained and even strengthened.¹²

Civilian Deployment

Besides demonstrating the importance of engineers and the value of host nation support, the Gulf War highlighted the key role of civilians in contingencies. The Defense Department relied heavily on its civilians during Operation DESERT SHIELD/DESERT STORM, and they performed well. "They came over and lived in conditions under a very stressful situation that is entirely different from deploying on an emergency of a hurricane or something like that," Captain Adams explained. "They actually came to war with us. And they came...to do the work, to share the hours that a lot of tactical-type people did."¹³

Corps civilians voluntarily left their families to work long hours in a potentially dangerous environment. And without exception, they chose to remain in the theater when hostilities broke out. General Ray observed that uniformed service members received "abundant and well deserved plaudits for their brilliant performance," culminating in a national victory celebration in Washington and ticker tape parade in New York. "The civilian members of our team," he argued, "deserve no less appreciation because their support was vital to the success of the operation."¹⁴

Operation DESERT SHIELD/DESERT STORM did much to validate the Total Army concept, including its civilians. The Army goes to great lengths, Colonel Cox observed, to build cohesiveness in its units so when they deploy, they function as a team, but Cox deployed with five civilians whom he had known

for less than 30 days. He formed an organization with Corps employees from many different districts and divisions. His organization was effective because the civilians were professional and dedicated. Referring to his staff, Cox noted, "there's no doubt in my mind that what I got was very high quality...we got the best they had to offer. We could not have done what we did in DESERT STORM and DESERT SHIELD without the civilian component," he added.¹⁵

Working together, the U.S. Army Corps of Engineers civilians and soldiers demonstrated their unique ability to respond to contingencies. Operation DESERT SHIELD/DESERT STORM, Colonel Braden noted, had "conclusively demonstrated the flexibility and responsiveness of the U.S. Army Corps of Engineers to contingency construction requirements." If the Corps had not had forward elements on the ground at the outbreak of hostilities, he added, "there would have been no responsive construction capability." He recommended that in the future military leaders deploy the Defense Department's contract construction agent (either the Corps of Engineers or the Navy) as early as possible.¹⁶

If the Corps had not been in Saudi Arabia early, Colonel Jenkins reiterated, there would not have been a responsive construction capability. He agreed with Braden that the Department of Defense must assure that the Corps and the Navy can deploy people as early as possible. "We should not be lulled to sleep in future force structure and contingency planning by the wealth of facilities we found in Saudi Arabia," Jenkins cautioned. "We need to be able to project force around the world, regardless of the infrastructure we find in the AOR [area of operations]. Without host-nation provided ports, airfields, etc., we could not project force in the time we were able to during DESERT SHIELD/DESERT STORM."¹⁷

Although Corps civilians volunteered in large numbers and those who deployed performed with courage and dedication, General Hatch warned that in an area where conditions might be rougher or more dangerous than Saudi Arabia, the volunteer response might not be as great. He raised a key question: "To what extent should we allow our increasing reliance on civilians in a combat zone put us at risk?" He suggested that some functions be performed by soldiers if they must be performed in a combat environment. He suggested that the Army minimize the number of civilians who deploy to a war zone and send only those who are essential.¹⁸

The need for civilian skills, particularly in the areas of contracting and real estate, however, will undoubtedly continue, and the deploying civilians must be provided with adequate support and protection. U.S. Army Corps of Engineers civilian and military personnel significantly improved the quality of life for tens of thousands of soldiers and made it possible for them to perform their missions more effectively.