

DEPARTMENT OF THE ARMY
COMPLETE STATEMENT
OF
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FOR THE HEARING BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES
ON
CONTRIBUTIONS OF PORTS AND INLAND WATERWAYS TO THE NATION'S
INTERMODAL TRANSPORTATION SYSTEM
ROOM 2167, RAYBURN HOUSE OFFICE BUILDING
1100 HOURS, 17 SEPTEMBER 2003

Mr. Chairman and Mr. Costello. I am honored to appear before this Subcommittee again. Responsive to your call for this hearing, I also am very proud to share with you the contributions of the United States Army Corps of Engineers (Corps) to our ongoing war against terrorism and tyranny, while building a lasting, stable democracy for the people of Iraq.

USACE Missions in Iraq

Our support to Operation Iraqi Freedom has been and continues to be one of my most rewarding experiences as the 50th Chief of Engineers. Our missions have been diverse, challenging and significant, and include:

- Support to U.S. Forces
- Restore Iraqi Oil Mission
- Support to the United States Agency for International Development (USAID)
- Support to the Office of the Coalition Provisional Authority

My testimony today will give you a summary of these critical missions and an appreciation for how our contributions in Iraq are made possible by our Civil Works missions and your continued support for them.

Support to U.S. Forces The Army “Reaches Back” to the Corps of Engineers

On the battlefield, engineers provide five different functions: mobility, countermobility, survivability, general engineering, and topographic engineering. In Afghanistan and Iraq, both prior to and subsequent to the initiation of operations in each country, and continuing on through today, Corps of Engineers experts and technology of the Corps are working to support the warfighting commander at Central Command in each of these five functional areas.

One capability that allows the Corps to provide rapid, even instantaneous support to the commander on the ground is through TeleEngineering. TeleEngineering is a video-teleconferencing type system that allows soldiers on the ground to “reach back” to subject matter experts in the United States. TeleEngineering has been critical in helping to solve numerous engineering challenges in Afghanistan and Iraq by providing the warfighters with engineering analysis from, and direct access to, subject matter experts throughout the Corps, DoD, other government agencies, academia, and private industry. TeleEngineering was initially developed by the Corps Engineer Research and Development Center (ERDC) to support the needs of troops in the field with the capabilities of the Corps staff in the United States. Those uses have expanded to supporting all missions of the Corps and the Army around the world.

In Afghanistan, the ERDC TeleEngineering Operations Center (TEOC), in Vicksburg, Mississippi, staff and researchers provided assistance in the areas of:

- Tunnel Detection, where U.S. forces were looking for personnel and material.
- Drop Zone Analysis – One question answered during early operations was the best place to land six rotary aircraft within X number of miles of a critical location, thereby getting personnel and equipment into the area safely and quickly.
- Mobility analysis - Provided mobility analysis for specific vehicles traversing different terrain to determine travel times required between various points of interest.
- Expedient airfield repair - Once the control of airfields was established, it was critical to get them up and operational for future use. ERDC personnel provided guidance on construction techniques and materials that could be used to rapidly repair the airfields.
- Force Protection – More recently, requests from the field have turned to force protection. ERDC researchers, in cooperation with Corps Centers of Expertise at Omaha and Huntsville, and districts are providing guidance on construction

procedures and materials to improve force protection measures for deployed troops.

Before Operation Iraqi Freedom, the Corps provided airfield, bridge and infrastructure assessments and evaluated water control structures, water system management issues, and port restoration requirements to those planning the operations. The Corps also worked directly with soldiers on the ground in surrounding countries to provide immediate technical assistance on problems encountered in theater.

Some of the services provided before and during military operations in Iraq were:

Dam Breach Analysis – Corps hydrology experts looked at worst case scenario flooding if a massive controlled release was initiated at certain dams or if they were breached by expedient demolitions to determine how the flooding would impact maneuverability and operations downstream.

Gap crossings and cross-country mobility – Corps engineers provided military planners with solutions for potential crossings of ditches or trenches that had been set ablaze with burning oil or crossings of irrigation canals. Corps researchers also provided maneuver units with analysis concerning cross-country movements in the area of interest to determine if specific vehicles could travel from point to point.

Bridge upgrade specifications – Soldiers in-country gathered information on bridge damage in several locations and provided the data to ERDC through TeleEngineering communications equipment. Subject matter experts in the United States analyzed the data and photos and determined the types of traffic the bridges could sustain, as well as the upgrades necessary to sustain traffic if damage to the bridges increased.

Once fighting began in Iraq, the TEOC provided daily support to soldiers in Iraq. Some examples of this support include:

- The TEOC received a call over a satellite phone from a soldier with the 54th Engineer Battalion. A bridge on the Euphrates River had been damaged. Engineers at the bridge site began to provide measurements and photos to the TEOC for analysis, but were delayed for 15 minutes while they dealt with Iraqi snipers. Once the threat was eliminated, transmission resumed and subject matter experts here quickly outlined several courses of action and provided a perfect solution to the soldiers just two hours later.
- After U.S. forces seized control of the Baghdad International Airport, the TEOC received a call at 10:30 p.m. local time asking for the Corps' assistance in getting water and electricity to the airport. TEOC engineers set up communications between the military unit at the Baghdad airport, the headquarters unit in the rear, the lead infrastructure assessment team at the Corps' Mobile District, the 249th Prime Power Engineer Battalion, the TransAtlantic Programs Center, and

ERDC. Within 45 minutes, pictures and blueprints started coming in from Iraq, and discussions were initiated to quickly provide the answers the U.S. forces needed. The airport's water and electricity were restored in a minimal amount of time.

- As military and civilian personnel began the work to rebuild Iraq and restore water, power, food and other services for the Iraqi people, the TEOC received a call from engineers with the 864th Engineer Battalion. The engineers had inadvertently broken a natural gas pipeline during restoration work. The TEOC and the Corps' Mobile District developed a workable solution in a very short time.

Contribution to the Air Campaign

Through ERDC research, the Corps also contributed to the air campaign in Iraq. When weaponeering a target, military planners choose a detonation location that they hope would result in the desired damage to the target. In many cases, the detonation might be in a specific room within the target. Using software developed by ERDC, military planners in Iraq were able to run thousands of sets of impact conditions on different munitions and provide estimates of target damage. The military planners then took those results and selected the desired delivery platform - aircraft, guidance package, release altitude and speed – to achieve maximum damage to the target.

Topographic Engineering Contributions

The Corps Topographic Engineering Center (TEC) also supplied significant products and services to numerous Army, DoD and Intelligence Community elements during Operations Enduring Freedom in Afghanistan and Iraqi Freedom.

Through TEC's Terrain Analysis and Water Resource Programs, which are unique within Army and DoD, the Corps provided critical and timely support to include:

- Production of Urban Tactical Planners (UTPs) for strategic Iraqi cities to support urban operations. The UTPs provided imagery and important feature information along with fixed route, labeled fly-throughs with 3-D models;
- Country-wide Engineer Route Study portraying critical route and terrain information such as soils, bridges, cross country mobility, minefields, ports, and ground photos in Iraq;
- Drainage Studies for seven key tactical routes to Baghdad, an important aspect of route reconnaissance;
- National and commercial imagery procurement and dissemination;
- Imagery Derived Products depicting change detection over selected cities; and,

- Quick responses to numerous daily requests for information from field commanders ranging from identifying optimal paratrooper drop zones to bed down locations, to water resources and new well site locations.

TEC also established “hot spot” links to its home pages in the Secret Internet Protocol Router Network (SIPRNET-Secret level) and Joint World-Wide Intelligence Communications System (JWICS-Top Secret level) to offer our crisis support products or services throughout the Department of Defense.

Examples of Corps Support to the Recovery

Below are a few examples of Corps contributions to the recovery of Iraq that draw directly on our reservoir of Civil Works expertise and capability. These contributions are also examples of “reaching back” to our extended Corps staff to help restore the Iraqi economy, and build a lasting democracy for the people.

Restore Iraqi Oil

The Secretary of Defense designated the Army as the Executive Agent to provide repairs of and continuity of operations for the Iraqi oil infrastructure. The Army assigned responsibility for the mission to the Corps. The initial efforts were focused on fighting fires related to the oil infrastructure and undertaking emergency repairs to restore operation of the system and its facilities, recalling that over 700 oil wells were set ablaze at the end of Operation Desert Storm. Today, we are working closely with the Iraqi Oil Ministry and the Coalition Provisional Authority (CPA), and Kellogg, Brown and Root to repair damage to the oil infrastructure and assist Iraq in returning the system to full operation. In addition, the Corps also has the critical task to provide for the import of gasoline and liquefied petroleum product for domestic use in cooking and as a principal means of purifying water. The Corps has worked closely with the CPA in developing the current assessment of the resources which will be required to restore Iraqi oil production to prewar levels and this will be reflected in the Administration's forthcoming request for supplemental funds. The Office of Management and Budget will be providing further details upon submission of the President's formal request.

As you know, this mission has received considerable attention in the media and was the subject of questions when I last testified before this subcommittee on Mr. Linder's 21st Century Water Commission bill. We are currently meeting mission requirements through a bridge contract with Kellogg, Brown and Root for needed services. This is an indefinite delivery, indefinite quantity contract. The scope is very broad. We are now well advanced in the process to replace this contract with a new contract awarded subject to full-and-open competition. We received proposals for this new contract on August 14 and expect to award in October.

Support to USAID

The Corps is also supporting the USAID in their efforts to restore Iraqi infrastructure. USAID is pursuing this huge challenge through a contracting arrangement with Bechtel. The Corps is providing engineering oversight to the Bechtel contract through an interagency agreement with USAID. The Corps is also working with a USAID international team to develop a hydrologic model which will more accurately predict water flows for the entire Tigris and Euphrates basin. This is being done by our Hydrologic Engineering Center in Davis, California. This work will enable the Ministry of Water Resources in Iraq to predict water flows to allow wise decisions among the competing water demands for agriculture, power generation, water supply, flood control, and will also predict available flows for possible restoration of the Mesopotamian marshes in southern Iraq.

Support to the Coalition Provisional Authority

The Corps has deployed an outstanding team in support of the Coalition Provisional Authority (CPA) led by Ambassador Bremer. The Corps team includes engineering leaders who bring critical expertise and management to the daunting tasks of restoring infrastructure under very challenging conditions. Our support includes:

- Technical Assistance
- Watershed Management Assessments
- Dam Safety Assessments
- Countrywide GIS Database
- Facility Assessments and Repairs
- Senior Ministerial Advisors in key ministries:
 - Water Resources
 - Electricity
 - Housing & Construction
 - Health
 - Transportation and Communications
- Facilities for the Iraqi National Defense Force

Support to Restore Iraqi Electricity

The Corps has recently been requested by DoD to provide technical assistance and contracting for additional efforts for the repair and restoration of the Iraqi electricity infrastructure. The Corps is preparing and deploying rapid response teams of power plant and transmission personnel, augmented by contractor personnel, who will work closely with the Iraqi Electricity Ministry, CPA and USAID to expedite repairs to the electricity infrastructure and make substantial progress in assisting the Iraqis in bringing the system to the 4400 megawatts (MW) level of power generation required by September 30, 2003. The first team deployed September 12. This effort is designed to have an immediate positive impact for the Iraqi people by providing them stable and reliable power required for normal living. The Corps mission is planned to be complete

by December 20, 2003. Our efforts will better enable ongoing work to set the conditions for the CPA, Iraqi agencies, and others to complete progress toward a goal of 6000 MW of power by May 30, 2004.

Civil Works Links to Our Military Readiness

Some wonder why the U.S. Army is charged with execution of civil engineering missions that appear to be far removed from the primary mission of preventing and winning wars. Land, water and infrastructure affect the course of military operations. Operation Iraqi Freedom provides the most recent example of the contribution of our Civil Works capability to winning wars. Furthermore, the Nation's military power is projected through seaports, especially the 14 Strategic Ports. Nearly all military equipment deployed to combat theatres passes through these ports, which are maintained by the Army's Civil Works Program with non-DoD funds. The Corps also controls traffic along the inland waterways system. In conjunction with the Coast Guard and industry, we can shift priority to military barge traffic during mobilizations, if needed.

In addition, the people working in the Civil Works program are dispersed throughout the Nation and can rapidly respond to any military contingency as they do in fulfilling the Corps role as DoD's executive agent for Emergency Support Function #3 (Public Works and Engineering) under the Department of Homeland Security's Federal Response Plan.

Hydrologic Engineering

The Corps is making significant contributions to recovery efforts aimed at managing the water resources of Iraq. On April 16, our forces on the ground expressed significant concerns about localized flooding in the lower basin of the Tigris and Euphrates River systems and expected heavy snowmelt due to higher than average snowfall. We immediately deployed a team to make a quick assessment of water management requirements. By April 18, two days later, we provided a response team. This team of experts drew widely on other Corps Civil Works resources including the Vicksburg District, ERDC, the Hydropower Design Center, St. Louis Archives Research, the Hydrologic Engineering Center (HEC) and Mobile District. Through the analysis of hydrological, meteorological and historic data, the team put together a management system for the Tigris and Euphrates systems, including daily reports. This system provides daily graphic and narrative meteorological data that reflect the previous day's precipitation estimate from satellite and includes a 24-hour forecast of precipitation, reservoir inflows, possible floods, evaporation and snow depth as well as a 10-Day precipitation outlook. This data is used to accurately forecast lake and flood levels in  Tigris and Euphrates basins. This effort refines and improves on the efforts made in 1995 and 1996 when flooding on the Sava River threatened the Implementation Force entry into Bosnia-Herzegovina.

Inspection of Dams and Hydraulic Structures

I am also proud of the work we have done to inspect dams and hydraulic structures in Iraq. On April 28, we were requested to provide a dam safety team. On May 4, our team was engaged. We drew resources from both the Northwestern and South Atlantic Divisions to assemble the required expertise in geotechnical, structural, electrical, mechanical, hydraulic, and civil engineering. Drawing on our experience in homeland security of our own dams, we also provided an analyst familiar with these issues to assist in safeguarding Iraqi structures from terrorist activities. Our inspection team provides the data and evaluations necessary to assess requirements for rehabilitation and repair of these elements of Iraq's critical infrastructure, as well as for providing reliable hydroelectric production to continue vital electric service to the country. The expertise needed to execute this mission is available within DoD due to the Civil Works mission of the Corps, where we maintain and operate 383 major reservoirs and have built over 8500 miles of levees and other flood damage reduction projects.

Conclusion

Mr. Chairman, I've shared some very impressive contributions based on the hard work and sacrifice our entire Corps team. These efforts are a continuation of the long and dedicated history of the Corps and its people, both civilian and military, in meeting the needs of the Nation, both at home and abroad, to assure our prosperity and a secure and safe world. I'm reminded of what General Eisenhower, then Army Chief of Staff, said at another hearing, this one before the Senate Armed Services Committee in 1947:

"I am firmly convinced that but for the existence of the Corps of Engineers peacetime organization and its resources of men, methods, training and supply, and its close association with the military through the years, the history of ... World War II would have been written more in blood than in achievement."

I'm proud to command the people who made the sacrifices of their time and special talents to not only assist in the battle against terrorism in Iraq, but more importantly lend a hand in bringing the country back to its feet.