ERDC
Engineer Research and Development Center

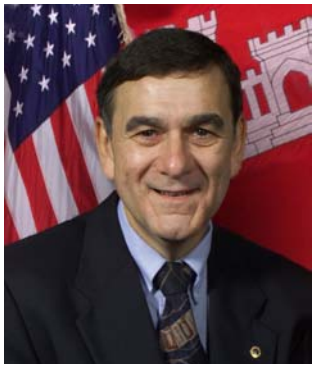
Information Bulletin

Special "ERDC Heroes" Issue

Dec. 5, 2003

"I think of a hero as someone who understands the responsibility that comes with his freedom" – *Bob Dylan*

ERDC Heroes



Americans love heroes, and since the events of Sept. 11, 2001, they have been on our minds and talked about more than ever. We tend to put them on pedestals (a place they never wanted to be) and idolize them for their acts of courage and bravery.

But real heroism is not simply about death defying feats, such as running into a burning building to save a child or falling on a grenade to protect a fellow soldier from harm. Heroism is also about making a positive difference and improving lives, or making contributions to the public good.

Americans take pride in strength, independence and ingenuity, and we tend to choose our heroes from those who reflect those ideals. We in the ERDC have many such heroes in our midst – ordinary people whose strength, independence and ingenuity have shone through in months past during Operations Enduring and Iraqi Freedom. We want to recognize some of those ERDC heroes in this special issue of the bulletin.

Our heroes have made, and continue to make, valuable contributions to military operations and emergency response situations around the world. They have deployed to Afghanistan and Iraq to help coalition forces before and during the military campaigns in those countries. They are there now, lending their expertise in efforts to rebuild countries that have been damaged by war and oppressive rule.

The ERDC can also point to heroes who made valuable contributions to recent conflicts without ever leaving the workplace. They loaned their expertise and resources, at all hours of the day and night, to solve problems for American and coalition forces on the ground in Afghanistan and Iraq.

Our heroes have also assisted in emergency operations in the wake of hurricanes and typhoons. Their support has been a vital part of relief efforts and should be recognized.

Everyone benefits by acts of heroism. The legacy of these acts add to our security, both real and perceived.

The holiday season is a time to reflect on giving to others. It is fitting that we honor our heroes – these extraordinary ERDC team members – who have given much to make a positive difference and improve the quality of life for people here at home and overseas.

We hope you enjoy this special Heroes Bulletin. As we enter this season of spending time with loved ones, please keep in your thoughts the many soldiers and civilians who will spend their holiday away from home, protecting our way of life and providing a better life to others.

//s//
A.J. Roberto, Jr.
Deputy to the Commander

Into Afghanistan – Operation Enduring Freedom

On Sept. 11, 2001, President Bush addressed the American people and the world after terrorists struck the World Trade Center and the Pentagon. "Make no mistake," he said, "the United States will hunt down and punish those responsible."

In the days and weeks to follow, the Department of Defense began mobilizing troop units and making preparations to go into Afghanistan, where the Taliban was believed to be hiding Osama bin Laden.

The United States put together the largest coalition in history, with 70 nations and thousands of troops supporting Operation Enduring Freedom.

At home, members of the ERDC also answered the call to support this operation.

During any military operation, there are many questions to be answered about terrain, infrastructure needed to support incoming aircraft, troops and supplies, and the best ways to protect the warfighter. Team members from the TeleEngineering Operations Center and ERDC researchers provided much needed information to the U.S. forces for planning and operations in Afghanistan. A few examples include:

- ***Tunnel Detection*** for U.S. forces looking for enemy personnel and materiel
- ***Drop zone analysis***, such as determining the best place to land six rotary aircraft within 150 miles of a critical location, thereby getting personnel and equipment into the area safely and quickly

- ***Mobility analysis*** for specific military vehicles to determine how fast the vehicles could move over a given terrain, thereby determining travel times required between points of interest to coalition forces
- ***Expedient airfield repair*** – once U.S. forces gained control of airfields in Afghanistan, it was important to get them up and operational for future use. ERDC provided guidance on construction techniques to rapidly repair the airfields to handle the large aircraft used by our forces.
- ***Force protection*** – U.S. troops in Afghanistan continue to get force protection guidance (construction procedures and materials for checkpoints and living quarters) from ERDC.

Mann provides pavement evaluation in Afghanistan

by Debbie Quimby, ERDC PAO

Reconstruction efforts are now under way in Afghanistan to rebuild a country torn by years of fighting and poverty. Because reconstruction needs are vast, it is important to prioritize the areas that need rehabilitation.

Travis Mann deployed in February 2003 as a reservist with the 412th Engineer Command. In October, he deployed again, this time in his civilian role with the ERDC Geotechnical and Structures Laboratory.

Travis Mann deployed to Kabul, Afghanistan, in October to assist in road reconstruction efforts.

Mann arrived in Kandahar, Afghanistan, on Oct. 11, then traveled through Bagram to the capital city of Kabul, his "home" for the next four weeks. Mann was assigned to the Corps' Afghanistan Area Office, which has primary responsibility for the reconstruction of the Afghan National Army's infrastructure. There are approximately 35 Corps employees in the area office who rotate through the TAC (TransAtlantic Programs Center) House. The TAC House doubles as working and living quarters for Corps personnel in Kabul.

Mann's mission was to deliver the ERDC-developed Automated Route Reconnaissance Kit (ARRK) and train Afghani engineers on its use. The ARRK provides accurate and detailed data collection along a reconnaissance route and does it 80 percent faster than conventional survey methods (transit, rod, chain and survey crew).

"I trained three engineers with the Afghan Ministry of Public Works on how to use the ARRK and the Dynamic Cone Penetrometer," Mann said. "Then, we conducted a route reconnaissance

along the roadway from Kabul to Gardez." Reconnaissance data was collected along the route and later analyzed to determine the best method for repairing the road.

"The Corps is coordinating with USAID (U.S. Agency for International Development) on prioritizing roads for upgrade and reconstruction," Mann said. "We are training the Afghanis how to identify the roadways and use engineering data to come up with priorities along secondary roads in the country."

Organizing a route reconnaissance in Afghanistan is an ordeal because of stringent security requirements. The country is still designated by the Department of Defense as a combat zone and U.S. and coalition forces occasionally engage enemy Taliban and remnants of al Qaeda. "Each route recon was required to include two vehicles, satellite communications equipment for calling in at designated check points along the route, and two shooters with either M-16 or long rifles," Mann said.

Mann poses with local Afghanis in Kabul.

By training the locals how to use these systems, the Corps can minimize the number of U.S. forces required to conduct reconnaissance missions. At the same time, they are building an historical database from information collected to assist the Afghanis with future construction efforts.

"It was a pleasure working with the Afghani people," Mann said. "And I can't say enough about the Corps people over there. They are doing amazing stuff. I'm a young engineer and this was the first time I saw the 'meat and potatoes' of what the Corps does around the world.

"We're building facilities for the Afghan Army – the right way, but fast and under strenuous conditions. They face daily battles over there, and I don't mean battles with contractor performance and things like that. I mean things like unexploded ordnance and real estate issues with people who still think they own the land over there."

This deployment gave Mann an appreciation of the challenges associated with building a nation. "It was an eye opening experience. I saw a nation that has been on its knees for the past 23 years struggling to get back up and move forward. Wounds that deep take time to heal, but it was great to see America being a part of that healing process."

Operation Iraqi Freedom – ERDC was there - before, during and after

On Mar. 19, when President Bush gave the order for coalition forces to hit a compound where it was believed key Iraqi officials were meeting, Operation Iraqi Freedom began. However, military leaders had been planning the operational details of the campaign for months prior to the air strike, and the ERDC played an important role in those plans. That role continues today as the Corps of Engineers and others undertake the task of rebuilding the country.

Before the war began, the ERDC provided airfield, bridge and infrastructure assessments, evaluated water control structures and port restoration requirements. The ERDC also worked directly with soldiers on the ground in surrounding countries to provide immediate technical assistance on problems they were encountering in the field. Some of those soldiers were ERDC team members who are also members of Army reserve units. These are their stories.

Family men, engineers, soldiers

by Angela Dickson, ERDC PAO

Capt. Sam Hunter, CERL, stands next to a welcome sign close to the Iraqi border

When Capt. Sam Hunter's commanding officer told him his deployment plans to Belize were being changed, Hunter, considering the events transpiring in the Middle East, was not surprised to learn that his unit, the 416th Engineering Command, was deploying to Kuwait.

Mobilization was not unexpected for Lt. Col. Robert Knowles either, but the 72-hour call-up created difficulty in transitioning his current work projects to others.

Joining Hunter and Knowles were Maj. Rick Ramsey and Maj. Daniel Oimoen, all ERDC team members.

While considering the impact deployment would have on their families, the soldiers were solid in their commitment to serve with their unit. "My wife, Kimberlee, and I were not overly excited about being apart, but were willing to do our part in a necessary global war on terrorism," Oimoen said.

Even though there was not much time for these men to transition from their civilian roles, their military mission was clear. "We just went to work," Hunter said. "Projects were coming down hot and heavy, and we jumped right in."

"The duties of the 416th were to provide command and control to theater engineer units," Ramsey said. "In essence, the 416th commanded all engineer units in the theater rear area."

Lt. Col. Robert Knowles, center, examines a map with Capt. Kyle Olmstead, left, and Capt. Rob Kirkpatrick, right, during site investigation for water wells in the Iraqi desert.

While overseas, the soldiers worked 18 or more hours a day, assisting in the design of 17 base camps, constructing two Patriot missile battery sites and a theater distribution center for all supplies and materials arriving in theater, maintaining supply routes, and designing and constructing guard towers, sun-safe structures and wash sites. "It was a constant stream of activity, but I enjoyed it," Hunter said. "The trick was to get as much done as you could and get it done right." One difficulty the team faced was a lack of construction materials. "We would design something, only to find out we didn't have what we needed, and we would have to start all over," Hunter explained. "It was a constant design and redesign process."

Hunter described the speed at which these designers had to work. "Right before going into a meeting, I got a call from Baghdad requesting a very specific project design," he stated. "I said I would work on it as soon as I finished the 11 road paving projects that needed to be completed. I was told the design was needed now. During the meeting, I sketched out a rough drawing. As soon as I got out of the meeting, they wanted to know what I had done. Startled, I gave them my drawing and it was immediately sent to a welder. It was in Baghdad the next morning. I learned a new meaning to the word 'now!'."

These soldiers have years of military experience between them. Knowles served in the first Gulf War, conducting reconnaissance and assisting with the set-up of peace talks for the armistice. Hunter deployed to El Salvador in 1999, and Oimoen went to Egypt in 1997 as part of an Eastern Castle exercise, but added, "it was nothing like this."

The soldiers did have some interesting experiences while deployed for this operation. Hunter had the peculiar experience of celebrating his birthday on the same day as the commencement of the ground war. Oimoen learned from his wife that their new neighbor, whom Oimoen had yet to meet, was also deployed to Kuwait and actually living in the building right next to him.

The men concluded the thing most westerners might find interesting is that the majority of Iraqis are just like us. "They want their children to have an education and they just want to make a living," Hunter said. "The Iraqi people know we are bolstering their economy and they want to be free. They want what we have—basic freedom, but what people do not understand is we are not just talking about speech, press and such. They want the freedom to be safe; safe from the fear they have felt for so long."

Maj. Rick Ramsey, left, poses next to a destroyed Iraqi tank with Lt. Col. John Gessner.

Knowles was astonished at the state of the country. "The lack of operating infrastructure in a country as potentially rich as Iraq was a surprise to me," he said. "There is still a lot to do if Iraq is going to have an operating nation state."

Ramsey explained that it is unlikely the entire unit will be deployed again in this effort. "The 416th only deploys for major operations," he explained. "However, engineers are in high demand, so the possibility certainly exists that we could be deployed as individuals."

Knowles's thoughts are with those continuing the effort to rebuild Iraq. "I am glad we did what we did, but am happy to be home. My thoughts are with those serving in theater and all those who will be in the future," he said. "There is no question in my mind we are winning the global war on terrorism, but it is a long way from being over."

"Overall, the experience was difficult, but positive," Oimoen said. "I feel like I made a difference, and I met a lot of super people whom I truly admire."

"It was an honor to lead and supervise great soldiers," Ramsey said.

The soldiers have learned through their experiences not to take anything for granted. "All I ask is that people remember the freedoms we have and the need to help others desiring the same," Hunter said. "In short, the drastic measures, the danger, the work, the tours of duty-- in the end, it IS worth it."

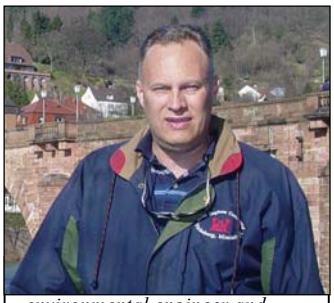
412th ENCOM mobilizes, ERDC members deploy

by Jamie Leach, ITL

Engineer soldiers are some of the first on the ground in combat operations and some of the last to leave when the conflict is over. This was true for three ERDC team members who also serve as active Army reservists with the 412th Engineer Command (ENCOM).

Lt. Col. Steve Pranger, EL, Lt. Col. Ray Moxley, GSL, and Capt. Travis Mann, GSL, deployed with facility engineer teams (FETs) in February 2003 to pave the way for coalition forces to enter northern Iraq through Turkey. The FETs that normally exist in the Army Reserves were not available for Operation Iraqi Freedom because they had been heavily mobilized in previous years to support Operations Joint Endeavor, Joint Guard and Enduring Freedom.

To support war planner requirements, the 412th ENCOM reorganized qualified and available engineer officers and noncommissioned officers into a FET module. Although Turkey eventually denied entry into the country, these teams still provided critical engineer skills to OEF and OIF, as well as support to U.S. Army missions throughout Europe.



environmental engineer and detachment operations officer during his deployment for the 412th Engineer Command.

Their expertise was used in support of combat planning for roadways, bridges, airfields, structures, blast analysis, industrial hazards, pipelines and utilities.

"Our initial mission was to set up rest stops, base camps, traffic control points, overnight stops, life support areas and fuel stops for the convoy of troops scheduled to move across Turkey into northern Iraq," Pranger said. "Instead, we performed engineer war planning from U.S. Army Europe headquarters in Heidelberg, Germany."

As operations officer for the detachment, Pranger analyzed incoming missions, recommended persons to perform the mission, and provided follow-up supervision to ensure tasks were completed in a timely manner.

Travis Mann served as the road engineer and communications officer for the 412th Engineer Command's FET deployment.

From Germany, Pranger, Moxley and Mann developed orders and briefings, reviewed intelligence and offered technical interpretation, and recommended courses of actions based on military and technical issues. They supported the 4th Infantry Division, 1st Armored Division, 173rd Airborne Infantry Brigade, and 26th Marine Expeditionary Unit.

"While we didn't actually end up in Turkey to support infrastructure development that would have become the base camp footprint and logistical tail for the 4th Infantry Division," Moxley said, "we did use the information and training to support soldiers who deployed into Turkey and conducted the first night airborne combat operation since World War II. We also fully supported the small U.S. Army Europe advance party that deployed to Turkey."

While preparing for deployment to Turkey, members of the 412th were instructed on use of the TeleEngineering Toolkit. "The guys from GSL came down and taught us how to use the software," Pranger said. "They taught us how to do road and bridge reconnaissance and how to determine airfield pavement capacity."

The toolkit software system allows soldiers to accurately pinpoint engineering problems on a digital map and transmit the data rapidly back to subject matter experts. The experts then transmit responses back to deployed soldiers that can be graphically displayed in the field.

Mann brought to this mission both active duty military experience and leadership skills, gained while serving in the 18th Airborne at Fort Bragg, N.C., and his technical skills with pavements and asphalt evaluation and soils analysis. Mann was scheduled to be the communications link with the real world via TeleEngineering Communications Equipment (TCE) had the 412th ENCOM deployed to Turkey. He successfully used the secure TCE to transmit valuable main supply route analysis that teams developed while undergoing mobilization training at Fort Polk, La. Using route reconnaissance data supplied by the TEOC, they identified critical choke points to convoy movement operations along the entire southern Turkish border with Syria and Iraq and sent it over the secure communications link to U.S. Army Europe. Convoy commanders in the advance party into Turkey used this information as they began the base camp development process, which was later canceled when the Turkish Parliament voted not to allow U.S. troops to mobilize through Turkey.

"Soldiers deployed with the 412th were a tremendous asset and provided critical engineer skills not only in support of the war against terrorism in Iraq, but also for Army missions throughout Europe," Moxley said. "Reserve soldiers once again, as in many prior mobilizations and deployment, demonstrated to the regular Army that we truly are an Army of One!"

When asked how this deployment affected him personally, Moxley said, "It had a tremendous effect, as I no longer had either an ERDC or a personal life. Fortunately our children are older, so this mobilization did not affect them as much as the '96 deployment to Operation Joint Endeavor in Hungary/Croatia/Bosnia."

Pranger, a chemical engineer who does dredging operations research and tests airborne land mine detection systems for EL, still found time to work on ERDC projects while deployed. "I ran some Craney Island dredged material consolidation model data for the Norfolk District during my down time," Pranger said. "All I had to do was turn over management of my rental property business. I don't have a wife or kids to worry about like Ray and Travis did."

Ray Moxley served as the facility team leader during his deployment with the 412th Engineer Command.

Mann left behind his new bride and his new position with the Asphalts and Pavements Branch at ERDC.

Moxley summed it up, "The bottom line is if I never serve another day in the Army, I have never been more proud to be part of a team of U.S. Army engineers that when called, went; when asked, did; and when things turned out differently than anticipated, did as asked. Did I want to go? Heck no. Was I glad I did? Without question. ESSAYONS!!"

Military leaders tap ERDC expertise for war planning
by Debbie Quimby, ERDC PAO

Good military strategy is essential to success when U.S. forces engage the enemy in battle. Just as important, however, are the decisions made during war planning before troops are sent into conflict.

Military leaders recognized the ERDC's ability to provide important information to the war planning process and tapped into its expertise months before Operation Iraqi Freedom began.

Dr. Gary Anderton and Dr. Jim Shoenberger direct construction and quality control operations at Masirah Airbase, Oman.

During October and November 2002, ERDC pavement experts provided on-site technical assistance to the U.S. Air Force 819th RED HORSE Squadron in the largest single construction project in the squadron's history. The project included reconstruction of the entire main runway and taxiway pavement, to include lighting and drainage systems, at Masirah Airbase, Oman.

Dr. Ray Rollings, CRREL, and Dr. Gary Anderton and Dr. Jim Shoenberger, both of GSL, directed construction and quality control operations for the airfield reconstruction project. They also validated production increases of Global Positioning Satellite (GPS) controlled earthmovers at the airbase. Travis Mann, GSL, assisted in bringing GPS construction technologies to the Masirah project.

The ERDC team helped solve a variety of construction difficulties involving excess ground water, soft subgrades, substandard base course aggregates, base course compaction, and asphalt concrete production and placement. Because of their on-site assistance, the large reconstruction project at Masirah was completed two months ahead of schedule and just days before Operation Iraqi Freedom began. Capt. Matt Benevegna, 819th RED HORSE Squadron, reported that, "the runway began accepting heavy traffic as soon as it opened."

Dr. Larry Lynch and Terry Stanton, both of GSL, left the day after Christmas 2002 and made their way to Turkey, where they spent the next five weeks providing training to reconnaissance teams with the 18th Engineer Brigade and the Corps' Europe District.

"We trained the recon teams on the Automated Route Reconnaissance Kit (ARRK) for bridge and route reconnaissance," Lynch said.

After training, civilians and soldiers collected data from approximately 2,500 kilometers of roadway, 100 bridges and five tunnels in Turkey. "The 18th Engineer Brigade was part of a survey team in Turkey to look at potential routes and facilities (bridges, ports, and airfields) that coalition forces could use as part of the potential northern option," Lynch said.

The recon teams passed the data collected to Lynch and Stanton, who then analyzed, consolidated and put the data in a format to be used in mission planning for Operation Iraqi Freedom. "All the roadways and bridges were deemed usable with the exception of one bridge near Sehvelet," Lynch said. "That bridge had deteriorated to the point that it could not carry proposed traffic."

This bridge near Sehvelet, Turkey, was determined to be incapable of carrying proposed traffic.

Although coalition forces did not stage any operations from Turkey, information gathered through the ERDC-developed ARRK and analyzed by Lynch and Stanton was used daily to brief Gen. B.B. Bell, U.S. Army Europe commander, for military operations planning.

"I've deployed to many places over my career," Lynch said, "and I always miss my family, especially around the holidays, but this was a job. Terry and I went in, did our job, and left. That's what it's all about."

Dr. Rick Olsen and Gerardo Velasquez, GSL, provided guidance on bridge placement and soil stabilization to Navy SEABEES in the weeks leading up to Operation Iraqi Freedom.

During the busiest days of Operations Enduring Freedom and Iraqi Freedom, the TeleEngineering Operations Center:

- Answered over 1,200 requests for information
- Provided more than 5,700 communications links

The TEOC continues to provide support to both operations

Andrew Harrison and Wayne Hodo, GSL, provided on-site technical assistance to the 823rd Expeditionary RED HORSE Squadron in February 2003 on airfield construction at Thumrait Airbase, Oman.

Bishop headed home with memories for a lifetime
by Debbie Quimby, ERDC PAO

Mike Bishop in Basrah, Iraq.

When someone volunteers for deployment to Operation Iraqi Freedom (or Enduring Freedom), he or she must first go to the CONUS Replacement Center, or CRC, to be "processed" before going outside the continental United States. While this may seem simple to an outsider, government employees know that nothing "governmental" is simple.

Mike Bishop, EL, went through the CRC at Fort Bliss, Texas. While there, he (and every other ERDC team member who deployed) received a round of shots, malaria pills, and physical and dental exams to ensure he was fit for deployment. He also had to make sure his will and power of attorney were up to date, and that he had listed a "next of kin." He was then issued Army gear, an Army haircut, and provided military training such as how to use a gas mask and how to detect mines, etc).

Once this processing was complete, Bishop was put on a plane and sent to Kuwait, then into southern Iraq. He arrived on Aug. 18 and is scheduled to come home on Dec. 13.

Bishop was brought into Task Force – Restore Iraqi Oil (RIO) as a GIS specialist. He also has a background in geology but had never worked with the oil industry before his deployment to Iraq.

While in Basrah, Iraq, Bishop is generating custom map products for area engineers, project managers and quality assurance personnel. He has also spent a great deal of time updating and standardizing oil and gas infrastructure databases. Nearly half his days are spent in the field with GPS (global positioning satellite) in hand, updating positional information for facilities. He also uses a digital camera and video to build a corresponding image archive.

"The highlight of this was an exciting two-hour ride in a British Royal Navy helicopter, following the paths of pipelines to key production facilities. Another major effort involved the synchronization of the GIS between the South Area Office – my responsibility – and the GIS in Baghdad," Bishop said. He finally teamed with Baghdad to build a functional schematic drawing of the oil and gas infrastructures.

"To this day, I feel strongly patriotic and honored that I was allowed to be a part of this mission," Bishop said. "I have never been surrounded by so many heroes and heroines in all of my days. There are heroes by the score here in theater, but there are many heroes back home covering for those of us who are over here."

"The men and women out front protecting us are the ones that make it possible for us to perform our jobs. The Corps is represented by some incredibly bright, ingenious and hard-working folks."

Bishop, right, poses with an Italian soldier and Iraqi child in Nasiriyah, Iraq.

Bishop said it was impressive to see the PMBP model implemented in an atypical environment. "It causes some very interesting dynamics with Iraqi officials, professionals and contractors."

When asked how this assignment has changed him personally and professionally, Bishop said that his answer might not be what is expected.

"Over the past few years of my life, I have experienced tremendous personal and professional growth. This maturation was a more than adequate preparation for everything I experienced here. This assignment was a perfect application of my newly achieved levels of capability and confidence."

Now, as he looks forward to coming home, Bishop states, "I have enjoyed the challenge and as I prepare to return to the United States, I am looking forward to the future."

ERDC contributes to Operation Iraqi Freedom from the home front
by Debbie Quimby, ERDC PAO

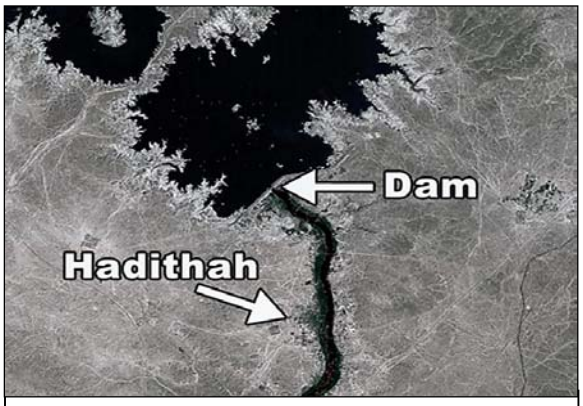
When we think of heroes, it is easy to call to mind great soldiers like George Patton, Audie Murphy and Dwight Eisenhower, or great leaders such as Dr. Martin Luther King, President John F. Kennedy or Winston Churchill, or humanitarians like Mother Teresa, Abraham Lincoln or Gandhi.

But heroes are not only those who wade into the thick of battle, lead movements or govern countries. They are not limited to persons who devote their lives to the betterment of their fellow man.

Heroes can be found every day, in every walk of life. Many make valuable contributions without ever coming to the attention of those around them. Author Wilferd Peterson once said, "Few of us will do the spectacular deeds of heroism that spread themselves across the pages of our newspapers in big black headlines . . . often the quiet, humble heroism is the greatest heroism of all."

During Operation Iraqi Freedom, ERDC heroes were all around us. They could be found sitting at computer terminals, pouring over mounds of data and images sent in from the battlefields of Iraq. They were answering pagers and cell phones in the middle of the night, coming back to work after only a few hours sleep to set up secure video links to answer critical questions for soldiers in the field. They also worked weekends to conduct video teleconferences (VTC), called morale VTCs, to connect soldiers in Iraq and Afghanistan with their families in the states.

You may never know who they are, but you can be proud of the service they rendered, and continue to give, to coalition forces. Our ERDC heroes faced some tough issues, before and during military operations, and provided quick and accurate solutions that directly affected U.S. and coalition success in Iraq.



Hadithah Dam is a critical hydropower facility located 125 miles northwest of Karbala, Iraq. The dam was seized by U.S. Special Forces because of information provided by the ERDC.

For example, on Apr. 1, U.S. Special Forces seized the Hadithah Dam on the Euphrates River, taking away a potential weapon from the Iraqi arsenal. The U.S. Central Command's decision to seize the dam was based on information provided by the ERDC. Hydrologists in CHL assessed the damage that would be caused if the dam were breeched by explosives or some other means. ERDC researchers determined that, in addition to its impact on warfighter maneuvers, flooding and lack of water in the aftermath of the dam's breech would increase the hardships suffered by the Iraqi people.

Engineers provided military planners with solutions for crossing ditches or trenches that had been set ablaze with burning oil to keep coalition forces from advancing into Iraq. ERDC researchers also provided maneuver units with analysis on cross-country movements in areas of interest to determine if specific vehicles could travel from point to point.

Many bridges in Iraq sustained damage during the war, leaving soldiers in country uncertain as to how much weight or traffic the bridges could hold. Data and photos were supplied to ERDC engineers, who then determined the types of traffic each bridge could sustain, as well as the upgrades necessary to keep traffic flowing if damage to the bridges increased. This was critical information for troop movements.

The ERDC TeleEngineering Operations Center (TEOC) provided daily support to soldiers before, during and after the war in Iraq.

Bridge damage information was relayed to the ERDC researchers, who assessed the damage to determine if the bridge was capable of sustaining traffic of advancing coalition forces.

The TEOC received a call over a satellite phone from a soldier with the 54th Engineer Battalion. Iraqis, hoping to slow the advance of coalition forces, had damaged a bridge over the Euphrates River. Engineer soldiers on-site needed to determine if the bridge was damaged beyond use and agreed to provide measurements and photos to the TEOC for analysis. In the midst of receiving information, TEOC personnel heard the crack of gunfire and the soldier cut the call short by saying, "I'll get back to you. We're being shot at." The engineers had come under sniper attack and had to deal with the enemy before continuing the call. Once the threat had been eliminated, the soldier called back and supplied the necessary data to ERDC subject matter experts, who quickly outlined several courses of action and provided a 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 Corps' assistance in getting water and electricity at the airport. TEOC engineers provided a link between the military unit at the airport, the Mobile District's infrastructure assessment team, the TransAtlantic Programs Center and the ERDC. Within 45 minutes, pictures and blueprints started coming in from Iraq and discussions were initiated to provide quick answers. Water and electricity were restored at the airport in a minimal amount of time.

There are many more examples of support provided to the warfighter by ERDC team members. Three ERDC employees have deployed to Winchester, Va., and the TransAtlantic

Programs Center (TAC) to provide assistance – **Richard Bondurant from CRREL, and Alma Epps and Edith Caples from GSL.**

Bondurant's job at TAC consists of two parts: a) financial execution and analysis for Task Force – Restore Iraqi Electricity, and b) assistance with oversight of the office responsible for the "care and feeding" of deployed personnel.

"Task Force - RIE and Task Force – RIO (Restore Iraqi Oil) are perhaps the major rebuilding initiatives that the Corps is involved in Iraq," said Bondurant. The amount of money being managed by the Corps of Engineers for these initiatives is astronomical and requires careful management and analysis.

"When I say 'care and feeding' of deployed personnel, I mean their pay, travel orders and travel vouchers," said Bondurant. "The job is altogether different from what I'm used to at ERDC, but I'm going to do whatever I can to assist the effort. That's the reason I volunteered."

Epps has interaction with Bondurant and Caples at TAC. She is assigned as a program analyst in TAC's Management Services Division. Epps provides financial operations assistance to program managers and their teams. "These program managers direct military programs associated with operations in Afghanistan and the global war on terrorism," Epps said.

"It is an eye-opening experience to observe the level of involvement and commitment that the Corps contributes to Operations Enduring and Iraqi Freedom. This deployment allows me to gain first-hand knowledge about some of the efforts being taken to rebuild Iraq. The workload is fast-paced, hectic and growing each day, but this is the aspect I enjoy the most. It is exciting to be considered part of the project team at TAC," Epps said.

PAO's own hero remembers

"It was an adventure that I will never forget," Wayne Stroupe said of his time in Iraq.

When the chopper's missile detection system inadvertently fired flare counter measures, believing they were under attack, Stroupe motions "calmly" to get this baby outta here!

Stroupe deployed from Aug. 24 to Nov. 19 to support public affairs activities in the Southern Area Office of Task Force Restore Iraqi Oil at Basrah, Iraq. This Corps task force has the mission to rebuild Iraqi oil production facilities to pre-war levels.

"Our work area was a region about the size of the state of Georgia. It included four major oil fields, three refineries, 40 gas-oil separation plants, six major pump stations, three major gas handling facilities, two water systems (water injection into wells to replace oil and process water for production use), two offshore loading terminals, about 500 oil wells and what seemed liked a zillion miles of pipelines," Stroupe said. "The repairs were running into the millions of dollars. When I left, the southern oil fields were exporting about 1.5 million barrels of oil a day."

Iraqi's oil facilities were mainly damaged by the looting that occurred after the fighting ended. But they also suffered from obsolete equipment, deterioration, lack of maintenance and a lack of spare parts.

"The average Iraqi only makes about $2 a day," Stroupe said. "In many ways, they're not that much different from us. They are worried about how they'll take care of their families; how they can make a better life for their kids. Ninety-nine percent of the Iraqis I met were friendly and cooperative. Most of them thought America, as the most powerful nation on Earth, would come in and everything would be fixed in a few days. But it doesn't happen that way. It's going to take patience by the Iraqis and by us Americans.

"It seems like all you see on TV are the attacks on our troops. But there are a lot of good things going on. A lot of the Iraqis are working and trying to make a better life. I hope both the Iraqis and we have the patience and strength to work together to stabilize their country and get them headed in the right direction. If we can do it both in Iraq and Afghanistan, there will be two less countries that openly harbor terrorists."

Stroupe knows first-hand what terrorists can do, and it is an image he will never forget. "I deployed to the World Trade Center right after Sep. 11. If we have to fight terrorism, let's fight it on their soil, not ours. The cost, especially in American lives, is high, but those images of 9/11 are still in my memory."

Marsh Arabs at Saddam Canal in southern Iraq.

Stroupe feels that the images of Iraq – the people and the countryside – will stay in his mind as well. "I met some great fellow Corps workers from all across the country and from all kinds of jobs. The construction contractors repairing the damaged oil sites also impressed me.

"But the images that really stick in my mind are those of our coalition forces. I met American, British, Italian, Polish, Danish troops, and some that I don't even know what country they were from. Those men and women are the heroes. They are out there getting the job done. It's dangerous, it's hard and it's not much fun," he said.

Some of those he met were just 18 or 19 years old, and some were middle-aged reservists, but all were separated from their families and loved ones.

"The problems we face in our jobs are very, very insignificant compared to what they face every day," Stroupe said.

"One last thing I learned from my time in Iraq - and it may sound corny and trite - but we live in the greatest country in the world. No doubt about it."

Stroupe stands in front of a gas flare at an oil field in South Rumaila.

TEC contributes to Operation Enduring Freedom and Operation Iraqi Freedom
by Jackie Bryant, ERDC PAO

Members of the TEC Operations Division played a significant role in Operation Enduring Freedom and Operation Iraqi Freedom by providing significant geospatial information products and services to numerous Army and Department of Defense (DoD) elements.

A recent successful well drilled by U.S. Army drillers in Iraq, using information provided by TEC.

TEC's Terrain Analysis and Water Resource Programs are unique within Army and DoD. TEC analysts produced Urban Tactical Planners (UTPs) for strategic Iraqi cities to support military operations. The UTPs provided commanders with up-to-date imagery, which described features that affect urban operations, such as buildings, terrain features, bridges, lines of communication, key cultural features and landmarks.

TEC analysts provided a countrywide Engineer Route Study (ERS) to military planners that allowed them to assess the overall terrain and climate for major routes within Iraq. The ERS portrayed critical route and terrain information such as soils, bridges, cross-country mobility, minefields, ports and ground photos. In addition, TEC-produced drainage studies enabled battlefield commanders to access seven key tactical routes to Baghdad, an important aspect of route reconnaissance.

Operations Division personnel also procured and quickly disseminated national and commercial imagery in response to numerous daily requests from field commanders for information that was critical to the success of land combat operations, such as identifying optimal paratrooper drop zones and bed down locations.

Water resources information on potable sources of water, aquifer locations and the most probable locations for drilling new well sites were also made available. TEC continues to support OEF/OIF with terrain data collection over Iraq.

TEC also established "hot spots" links to its home page in the Secret Internet Protocol Router Network (secret level transmissions) and the Joint Worldwide Intelligence Communications System (top secret level transmissions) to offer crisis support products or services throughout the defense community.

Once just isn't enough
by Angela Dickson, ERDC PAO

Al-Chaar and his team had to fix this cable, which had been cut the night before by a looter hoping to sell the copper inside

Dr. Ghassan Al-Chaar is set to deploy to Kuwait to assist in Operation Iraqi Freedom—for the second time.

With more than 14 years as a structural engineer at CERL, Al-Chaar loves doing research and the challenge of creating unique solutions to often "solution-less" problems. "This is the perfect situation to contribute to," he said. "There is so much to do over there. You have to be creative and use your common sense."

Al-Chaar deployed earlier this year for a 100-day stint in Kuwait and the surrounding areas in support of Operation Restore Iraqi Oil. He spent most of his time at Camp Doha, serving as the liaison between the north and south major offices and ultimately, the Iraqi people.

He assured that structures were constructed according to specifications, conferred with crews working on oil wells, refineries and pipelines; was responsible for requisition approval, and monitored all activity for potential issues that could arise.

Al-Chaar's work required him to make the six-hour round trip into Iraq an average of three times a week. Still, he wanted to do more and often volunteered for overnight troubleshooting detail, making sleep a scarce practice. "Besides work and sleep, there wasn't much to do," he said. "If I didn't need to sleep, I wanted to work as much as possible."

Security restricted any recreation or sightseeing. "You can't just walk around the block," he said. "Once we tried to get creative and got lost," he explained. "Before we knew it, our windshield was being hit with a few stones."

Still, Al-Chaar explained instances like this are quite rare. "I was surprised to discover so many people welcoming us with open arms. Soon after I arrived, I was greeted by a crowd of Iraqi children waving at us. This didn't happen just one time, either. Almost every time I saw someone, an adult or child, I was welcomed and greeted with a wave and a smile. It always felt good to help them and make a difference."

The sad thing, he noted, was the incredible poverty in a country that is supposed to be a powerhouse. "All this misery on the surface of incredible wealth - it just does not add up," Al-Chaar said. This poverty was a big part of his decision to deploy for a second time. "I just want to help," he said.

In addition to his engineering expertise, Al-Chaar had another unique characteristic enabling him to be an even greater asset to recovery efforts. A native of Syria, he speaks Arabic well enough to be mistaken for an interpreter. He was able to communicate ideas and answers to people who often did not understand the situation. However, his bilingual ability could sometimes be a curse. When the locals heard him talk, Al-Chaar would often get bombarded with questions about just about everything. "It was frustrating at times, because they just wanted answers, and I did not always have them," he explained.

Al-Chaar will be spending more time with Iraqi children during his second deployment, working on the adopt-a-school program.

Al-Chaar also assisted with a new program aimed at helping school children in Iraq. The adopt-a-school program allows westerners to donate much needed supplies to Iraqi schools. Although he did not feel he was there long enough to do as much as he wanted, Al-Chaar evaluated school needs, met with school principles and served as an adviser on the adopt-a-school program. On his second deployment, he hopes to have more interaction with the schools and contribute more to the program. "Reaching out to the young children is really the right thing to do," he said.

Al-Chaar does not want any medals or special recognition. He sees himself simply as someone who can help. "I am just a person—a person doing his job," he said.

On his second trip for this operation, he expects to see a better country, but knows everyone has to be reasonable. "I know there have been improvements and expect to see even more when I get there. The average person may not be able to see it, but as an engineer, I can see the difference," he said. "The first step is security, the second is communication, and then water."

Al-Chaar expects this deployment to last approximately four months and recommends the experience to anyone having something to contribute. "It's not a road full of roses," he adds, "but you feel like you make a difference."

Still, his family is concerned. Watching television, his wife often looks at him, then the TV, then back at him. "Don't worry," he assures her. "I am not going to be anywhere near that danger."

Even though Al-Chaar wants to help as much as possible, considering his family and other obligations within ERDC, he most likely will not deploy a third time. Therefore, he wants to do everything he can this time around.

Corps teams use ERDC experts to assess Iraqi bridge

by Grant Sattler, Iraqi Coalition Provisional Authority PAO

Bryton Johnson, Combined Joint Task Force-7 FEST-A enters data following a bridge assessment to the ERDC, using the TeleEngineering Communications Equipment-Deployable system.

Europe District's Forward Engineer Support Team-Augmentation (FEST-A) recently showed the lengths to which Corps of Engineers teams will go to support the warfighter.

Assigned to the Combined Joint Task Force-7, the FEST-A responded to a request for information from the 82nd Airborne Division operating in western Iraq to provide a bridge assessment of a span crossing the Euphrates river at Al Qa'im near the Iraqi- Syrian border.

The 3rd Armored Cavalry Regiment was using the bridge frequently because of continued resistance by hostile forces north of the river. "They needed to know if the bridge would support the heavy M1 Abrams tank," said Capt. Derek Ulehla, FEST-A team leader. "They were already crossing with their Bradley Fighting Vehicles."

Hunter Dandridge, FEST-A team member, said the task was very important. "It was a critical mission," he said. "They needed to know if they could use the bridge to pursue terrorists or insurgents."

There were two float bridges in the area, one placed in the 1980s - a Mabey-Johnson Compact 100 bridge - and a locally constructed pontoon bridge of unknown vintage that was considered hazardous. A new float bridge was on the way to the area to replace the local bridge, but for tactical reasons, the FEST-A team needed a valid load classification on the compact 100 bridge to provide two safe avenues of approach to the north, Ulehla said.

Combining the bridge assessment with another mission, Ulehla, Dandridge and fellow team member Bryton Johnson traveled to the bridge location with their TeleEngineering Communications Equipment - Deployable (TCE-D) that enables them to communicate with technical experts at the ERDC in Vicksburg, Miss. This "reach-back" capability is a valuable asset the FEST brings to combat units, Ulehla said.

The FEST-A explained to the 3rd Armored Cavalry Regiment what it would take to accomplish the assessment and the mission was set for the next day. Because the area was not entirely secure, the team went out in an armored Hummer with a .50-caliber machine gun, accompanied by four Bradley Fighting Vehicles and two Kiowa helicopters.

The group rolled out, and as security was established, the bridge assessment team set up the TCE-D for video teleconferencing and set to work on what normally would take the better part of a day to accomplish.

"We measured the span, depth and width of the pontoons. We measured the connections between the pontoons and the bridge, measured the trusses, bracing, the depth," Ulehla said. "We photographed everything. We looked for missing bolts and found five gone."

Dandridge also noted corrosion on the underside of the steel decking.

Military equipment crosses an aging pontoon bridge in western Iraq as Combined Joint Task Force-7 FEST-A engineers assess its condition.

"Of importance were the connections to the pontoon and the connection of the bridge structure to the framing structure," Johnson said. "On the shores we were crawling underneath and through goat crap to get pictures and measurements of the cross beams. We smelled just like a farm."

The sound of mortar fire in the not-so-great distance encouraged the group to work as quickly as possible.

"We were doing this in concert with the ERDC," Ulehla said. "So we had the bridge expert right there giving us one or two pieces of the equation. He would say look at this or that. We would take photographs and report back to give him some basic dimensions. Meanwhile, they're working on their side to ensure we're getting all the data we needed." The assessment was completed in just 2-1/2 hours.

"It was exhausting. We were hustling back and forth in body armor - up and down - measuring, with just a few stops for sips of water," Ulehla said. The team returned to the forward operating base to complete transmission that evening of all the data collected.

"It was as adventurous as any military project I've ever worked on," Ulehla said. "We were almost expecting mortar rounds to start splashing in the river like you see in the movies when we were out on the bridge."

For Johnson, it was his first project off post in four months in theater where security was a real issue. "It was a possible target, and then having people watching and realizing that we're there for a while, out exposed on the bridge," he said.

The success of the assessment is due to the ERDC team of Jeff Powell, Gerardo Velazquez, and James Ray who were "...up in the middle of the night to support us," Ulehla said.

Johnson said ERDC contacted the original manufacturer of the bridge to see if it could be repaired and brought back to its original load classification. “They said it really wasn't feasible because of all the missing parts. The components are no longer manufactured,” he said.

As a result of the assessment, the 3rd Armored Cavalry Regiment was given a valid load classification within two days, based on the current condition of the pontoon bridge.

ERDC officer deploys for TF-RIO

by Jamie Leach, ITL

Conditions were harsh and dangerous for coalition forces and contractors working in northern Iraq. Scenes like this were common occurrences.

Maj. Eric Betts deployed to Kirkuk in northern Iraq from July to November as the commander and area engineer for Task Force - Restore Iraqi Oil (North). Betts was in charge of 85 American contractors and Corps civilians whose mission was to restore the Iraqi oil infrastructure in the north; to secure it using 1,300 contract Iraqi security guards and North Oil Company police; and to resume production and export of oil to pay for the rebuilding of Iraq.

The infrastructure restoration was a $550 million program consisting of 68 construction and procurement projects. In addition to clearing and rebuilding wellheads, treatment plants, pipelines and gas compressors, they rebuilt North Oil Company schools and hospitals. “This was the principle - that it is better to teach a man to bake than give him a loaf of bread – applied to an entire country,” Betts said.

Bett’s area of responsibility was the region north of Baghdad to Turkey, east to Iran, and west to Syria. Forty percent of Iraq’s oil resides beneath the ground within 50 km of Kirkuk. This oil accounts for 6.4 percent of the world’s known oil reserves. When Betts left Iraq, the area was producing 610,000 barrels of crude oil per day (which translates to $23.4 million worth of oil per day).

“Sadam didn’t believe in capital reinvestment,” Betts said. “He looked on the oil infrastructure as a cash cow and has worked it to death. In Iraq, ‘new’ facilities are 20 years old. There’s no cathodic protection in the pipelines. The sour crude he ran through there was eating the pipeline itself. Now the pipelines break under pressure - not to mention the terrorists and looters. Looting caused more damage to the oil infrastructure than the war itself. This is why security was so important.”

While in Kirkuk, Betts lived on the North Oil Company compound in a petroleum building across from the new Kirkuk refinery. "We worked with, lived with, and shared danger with the Iraqis of the oil operating companies. By doing so, we worked towards winning the hearts and minds of the Iraqi people," Betts said.

At the ERDC, Betts is a computer scientist and Army acquisitions officer assigned to the Information Technology Laboratory as its military R&D coordinator. Before he left for Iraq, he was the program manager for software and network testing and evaluation.

Of his time in Iraq, Betts says, "I was most impressed by and proud of the bravery and dedication of the Iraqi workers, the KBR (Kellogg Brown and Root) contractors, and our Corps civilians. Despite the danger of being a prime target for terrorist attacks, unarmed and only lightly guarded, and having been attacked on multiple occasions, we continued to go out every day and continue our work of building a better Iraq."

Maj. Betts poses with the "rat patrol," security forces used to protect coalition workers from the enemy.

"As important in this war as the soldier is the engineer, the fireman, and the schoolteacher. This war is a test of wills and Americans at home need to realize this. Our people on the ground in Iraq have the will and the guts to see this through despite the burden of unbelievable hardships that cannot be understood by those living in comfort at home."

Our people over there live in abominable conditions and risk life and health every day because they believe in what they're doing. They know this war is between forces of oppression and forces of order. They are fighting to build a safer world for all of our children - Iraqi and American. All they ask is our support. So, let's support them."

McGill takes his expertise to Task Force - RIO
by Jamie Leach, ERDC ITL

Tom McGill at South Rumaila Well 6-6 in southern Iraq.

Tom McGill went to Camp Commando, Kuwait, as a member of the Corps' Task Force Restore Iraqi Oil (RIO). He served as the Geographic Information System (GIS) specialist for the Southern Area Office in support of Operation Iraqi Freedom from April to August 2003.

McGill produced numerous maps and other GIS products critical to the operational success of Task Force RIO, including development of a database of all ordnance located in the mission area. He also worked in spill control mitigation, cleaning up oil spills from wellheads damaged during battle and from sabotage and poor maintenance.

Due to mission requirements, McGill was witness to several unexploded ordnance demolition shots. "We used engineering controls to make sure we didn't blow up anything that was still needed," McGill said.

While the Huntsville Engineering Center did the explosive work, McGill tracked the work and produced maps of areas safe to travel. "It was my responsibility to show what wellheads, roads and facilities had been cleared of ordnance," he said. "My work took me as far north as Majnoon and the Rumaila oilfields, as far west as Al Luhays, and as far south as Al Faw."

Some of McGill's work was at South Rumaila Well 6-6, located in the Rumaila oilfield in southern Iraq. Before it was damaged during the early part of the war, this well fed Gas Oil Separation Plant 6. Due to its location and the characteristics of the site, free product from other crude oil spills was staged there to facilitate more efficient remediation. Well 6-6 was easily accessible, but not near any residential areas or water sources.

The main thing McGill brought out of his experience in Iraq was to "be flexible." "The job was never the same two days in a row. I was there through three supervisors and our role changed with each new supervisor," he said.

"Task Force RIO faced a monumental task, and its members did a fantastic job. I was able to work with very talented people, both military and civilian. I learned a lot about direct military support and how our products are directly usable. Due to the rapidly evolving conditions, we

had to be flexible. We had to make decisions and go forward without all the pieces being in place beforehand," McGill said.

Part of being "flexible" during deployment was the need for patience on the road. Undoubtedly, camels have the right-of-way in Iraq.

"It was a once in a lifetime opportunity. I worked in a fast-paced environment with extremely high caliber people. When we first arrived, I saw the Iraqi people standing on the sides of the roads with blank stares. When I left, I saw people smiling and getting on with their lives. Kids were going back to school and the people were repairing buildings that had been damaged during the first Gulf War. Seeing the Iraqi people going from being stoic to beginning the process of rebuilding was gratifying."

When asked what how this trip affected his personal life, McGill said, "I really appreciate state-side air conditioning! The regulations said we had to have air conditioning in our tents. We did - just no power to run them for the first two months I was there."

"I would recommend an overseas deployment to others. The professionalism of the civilian and military people I worked with was incredible."

More examples of support

We could publish a book on the many missions undertaken by ERDC personnel during Operations Enduring and Iraqi Freedom (you may feel you're reading a book right now). The truth is, we do not have room to publicize all the good things ERDC has done for the warfighter and for the people of Iraq. We would like to mention a few more missions and ERDC heroes that we may cover more in-depth at a later date:

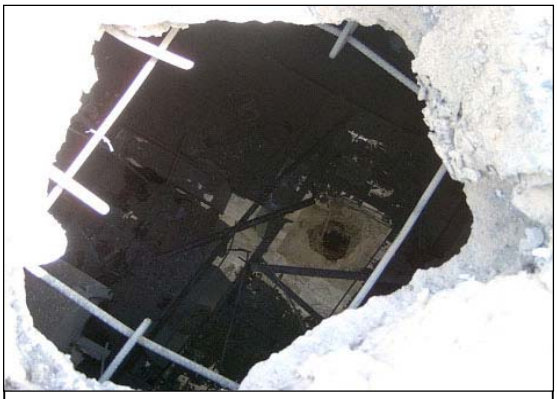
- Carlos Gonzalez and Patrick McCaffrey conducted pavement design and evaluation training at Fort Polk, La., in support of the war in Iraq. They were recognized by Maj. Gen. Richard Coleman, Commander of the 412th Engineer Command, for their "commitment to the Engineer Regiment in supporting the mobilized detachment's training request on such short notice and in a superb manner. The training provided to my soldiers will serve to ensure the success of their mission in support of the war against terrorism."

- The Air Force Civil Engineer Support Agency stood up a Readiness Operations Cell on Sept. 11, 2001 and began collecting data on bases to assist deploying forces. The team fielded questions concerning more than 100 airfields in 10 countries, all while preparing to deploy in support of Operation Enduring Freedom. The ROC deployed with the Automated Dynamic Cone Penetrometer (ADCP), the Electronic Cone Penetrometer

(ECP), and Pavements-Transportation Computer Assisted Structural Engineering (PCASE) software, all designed by GSL. According to Master Sgt. Scott Melton with the ROC, "the ADCP software, as well as the ECP and PCASE software performed flawlessly. More than 25 airfields have been evaluated using this equipment and the team continues to provide evaluation support within the area of responsibility to ensure an uninterrupted Air Force mission."

- Building Demolition Support – "One of the great successes of this has been the Field Force Engineering. The rugged 14th Engineer Battalion got to do a building demolition – the Iraqi Special Security Office Headquarters, which had been hit by four bombs but was still standing because it had two-foot thick reinforced concrete floors and pillars in it. They (the 14th En Bn) went in there and, with one shot, took it down . . . based on design done by TeleEngineering back in Vicksburg. If I hadn't had those guys, I'd be lost." – Division Engineer, 4th Infantry Division.

Iraqi Special Security Office headquarters, after being hit by four bombs.



This photo shows the reinforcement to the security headquarters building, which proved not to be an issue for ERDC experts, who provided information on how to demolish the building to U.S. forces.

- ERDC research also contributed to the air campaign in Iraq. When weaponeering a target, military planners choose a detonation location they hope will result in the desired damage to the target. In many cases, detonation may be in a particular room within the target. Using PENCURV+/RSM 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 warfighter then took these results and selected the desired delivery platform – aircraft, guidance package, release altitude and speed – to achieve maximum damage to the target. The accuracy of this software was praised by Northrup Grumman officials who said, "***without the [ERDC-developed] software, it would have been impossible for the Targeting/Weaponeering Assistance Cell to process the assigned target list before initiation of the air campaign."***

ERDC heroes assist typhoon and hurricane relief

by Debbie Quimby, ERDC PAO

Winds from Typhoon Pongsana hit the island of Guam at 180 miles per hour.

Typhoon Pongsana released its fury on Guam Dec. 8, 2002, turning into a super typhoon just being hitting the island. The typhoon was so severe with 180 mile-per-hour winds, that it quickly claimed the number two spot on the Red Cross list of the Top Five disaster responses of 2002.

Flore Crawford is part of a Corps' Resource Management Planning and Response Team that consists of about 40 people who respond after events such as Typhoon Pongsana.

Crawford assisted the Pacific Ocean Division from January to February 2003 with funding, travel, phones, briefings and time and attendance for Corps employees going to Guam. "We processed 40 to 50 employees a week, working 10 to 12 hours a day, seven days a week," Crawford said.

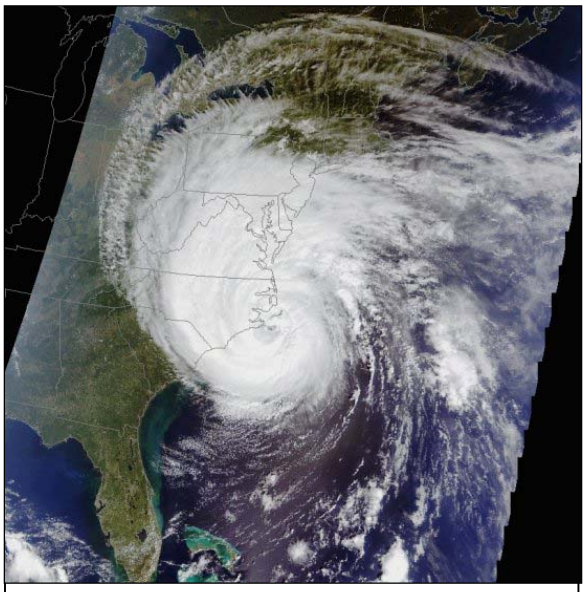
Crawford's team assisted employees with clothing, passports, shots, safety, travel, rental cars, hotels and what to expect when arriving in Guam. "The Emergency Operations Center was a very busy office at all times, with six to 10 people working very close," Crawford said. "Cell phones were ringing, regular phones were ringing, and employees were being processed in and out. You had to adjust and get the work completed."

"The employees at POD were great to work with – military people and civilians working hand in hand to get the mission completed. This was great opportunity for me to work under tremendous stress and see the process come together and be accomplished with all of us working together."

Crawford, second from left, with some new friends from POD.

Crawford was shown a film of the destruction on Guam in the wake of the typhoon to gain a better understanding of what had happened and what she was assisting with. "It was one of the most rewarding months of my life, knowing that my help was needed and used to assist the people of Guam who lost everything. I also gained some friends and a closeness with employees in POD that I'll treasure for the rest of my life."

"It takes a certain type of person to assists others. You must be ready to provide help, no matter what the task may be. If you're a GS-12 and asked to perform GS-5 duties, just do them with a smile, knowing that you're helping others."



Sept. 18, 2003 – the sight Hurricane Isabel from the shores of North Carolina was frightening. This photo from space shows its terrible beauty.

Hurricane Isabel hit the eastern coast of the United States in September of this year. ERDC's own Field Research Facility at Duck, N.C., was hit on Sept. 18. Hurricane Isabel became the most significant event in the facility's 27-year history, producing the largest waves ever recorded at the FRF. The eye of the hurricane made landfall near Morehead City, N.C.

Sharon McBride and Cissy Killgo deployed to the Wilmington District in support of Hurricane Isabel recovery efforts. They provided resource management assistance to emergency management teams deploying to Wilmington. These teams consisted of the Ice, Water and Power Mission Teams.

"I had the opportunity to see firsthand the enormity of relief efforts provided by the Corps," McBride said. "Whether the task was acquiring and distributing ice and water, or restoring electricity to the masses, it is amazing to see everyone doing his or her part to accomplish their mission in the shortest possible time."

McBride said Corps team members responded to mission requirements in the most professional manner. "I feel honored to have worked on one of our Emergency Management Planning and Response Teams and would proudly do it again. It was exhilarating to see the results of my efforts."

"My biggest regret is that my deployment lasted for only eight days. This short period of time was the second most interesting in my federal career. The first was while I worked for the Vicksburg District. I rode out a tornado on the dredge in Baton Rouge, La., while filming the disaster with a camcorder!"

We hope you enjoyed this special ERDC Heroes bulletin and that you feel the same level of pride in ERDC and our heroes that we do.

The ERDC currently has team members deployed in Iraq and Afghanistan who, for security reasons, we cannot identify. They are providing valuable support to efforts in both countries and we wish them well. Once they return stateside, we hope to bring their stories to you.