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Engineer Update

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Flowers sworn in as 50th Chief of Engineers

Article by Bernard Tate
Photo by F.T. Eyre
Headquarters

Lt. Gen. Robert Flowers took command of the U.S. Army Corps of Engineers on Oct. 23 in a ceremony at Fort Myer, Va. Flowers is the 50th Chief of Engineers.

During the ceremony, Flowers was also promoted from major general to lieutenant general, and the historic gold castles originally owned by Gen. Douglas MacArthur were pinned on his uniform.

Flowers is the former commanding general of the Maneuver Support Center and Fort Leonard Wood, Mo.

"The Corps of Engineers is the largest public works organization the world," said Gen. Eric Shinseki, Chief of Staff of the U.S. Army, as he introduced Flowers. "It's difficult to grasp the incredible scope of the Corps' missions, the diversity of their work. Bob Flowers understands the complexities of the Corps' missions as well as the richness of its history. In pinning on MacArthur's gold castles, he follows in the footsteps of our great former chiefs. He is a dedicated and selfless leader who will bring a clear vision for excellence to the Corps."

Then Flowers took the podium.

"When I was at Fort Leonard Wood, I was seriously considering retiring," Flowers said. "In February, when the first adverse articles came out about the Corps of Engineers, Linda (Flowers' wife) came to me and said, 'You know what this means, don't you?' I said, 'No,' and she said, 'It means they need you, and you need to go for this job.'

"To the men and women of the Corps of Engineers, your reputation for excellence is second to none," Flowers continued. "I've got great faith in the men and women of the Corps, and in the way you conduct day-to-day business. If we continue to operate under the same principles of credibility and integrity as those who came before us, there isn't any challenge we can't seize. By working together, I promise you that the U.S. Army Corps of Engineers will not let this country down.

"Ladies and gentlemen, the Army Corps of Engineers has a lot of work to do for the future of this country, and I can't wait to get started," Flowers concluded. "God bless all of you, God bless our great country. *Essayons!*"

Lt. Gen. Robert Flowers, the 50th Chief of Engineers, takes the Corps flag from Gen. Eric Shinseki, Chief of Staff of the Army.

Corps' FUDS program reaches out

By Candy Walters
Headquarters

With properties in almost every state and U.S. territory requiring environmental cleanup, the Formerly Used Defense Sites (FUDS) program is reaching out to change its way of doing business. During this transformation, regulatory agencies, property owners, and communities can expect to play larger roles in the planning and completion of these cleanups.

Authorized by Congress in 1986, the FUDS program cleans up contamination generated by the Department of Defense at properties formerly owned, leased, possessed, or used by the Army, Air Force, Navy, or other defense agencies. The Army is the executive agent for the DoD program, and the U.S. Army Corps of Engineers is responsible for executing it.

Partners

"We're looking forward to realigning the FUDS program to increase regulatory and stakeholder communication, coordination, and consultation in our projects," said Robert Lubbert, the Corps' FUDS branch chief at Headquarters. "Ongoing partnering efforts have provided major tangible benefits to the FUDS program and helped expedite the cleanup process to the satisfaction of public stakeholders and regulators. We anticipate that the changes we are undertaking will further help us reach our cleanup goals."

In Oct. 17 remarks to the annual meeting of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO), Sherri Goodman, Deputy Under Secretary of Defense for Environmental Security, and Ray Fatz, Deputy Assistant Secretary of the Army for Environment, Safety, and Occupational Health, both stressed that changes being made to the FUDS program require the active participation of state and federal regulators, tribal governments, and the local communities the cleanups protect.

"This is something we're designing with you," Goodman told the state and territory managers at the ASTSWMO meeting in Arlington, Va. "We want to do this with you and want to be partners with you. It's important that what we design works for you and all the people in your communities."

Funding

Accelerating cleanups cannot occur, Goodman said, unless funding for the FUDS program is increased. "At the current funding (approximately $230 million a year), it would take too many decades, until 2060, to buy out the FUDS program," she said. "That's too far away. We want to bring that in closer by buying out the FUDS program by 2020."

Current estimates put a more than $7 billion pricetag on completing the FUDS program but, because of an expected increase in unexploded ordnance work, officials say that figure is expected to rise. Goodman's office has been working with defense department budget officials to secure additional funding for the FUDS program in the fiscal year 2002 budget.

Fatz said that his office is asking for the states' help in "developing the how-tos" on the most effective means of incorporating regulatory and local concerns into the FUDS program. With more than 2,500 properties and more than 4,370 projects on those properties requiring cleanup, the FUDS program scope and magnitude are significant. Fatz praised the Corps' FUDS program for its outstanding execution during this past fiscal year, and stressed that the initiatives are "evolutionary rather than revolutionary."

The FUDS program has been under fire by a number of organizations, including ASTSWMO, the U.S. Environmental Protection Agency, the National Governors' Association, and the Environmental Council of States. All have noted that the program is inadequately funded, and that there is a need for increased stakeholder involvement in planning and prioritization. Because of the program's breadth,it also generates a great deal of congressional interest.

Both EPA and ASTSWMO accepted an invitation from the Army and the Corps to participate in a workgroup that will recommend program changes.

Michael Shapiro, EPA Principal Deputy Administrator of the Office of Solid Waste Emergency Response, told ASTSWMO members EPA will "help and assist DoD in moving the process forward. This is a very, very promising start, one we want to encourage."

"This workgroup will look at the nuts and bolts, and hopefully, we'll be able to provide a better national perspective from the states," added Jennifer Roberts of the Alaska Department of Environmental Conservation, and chairman of the ASTSWMO current issues focus group.

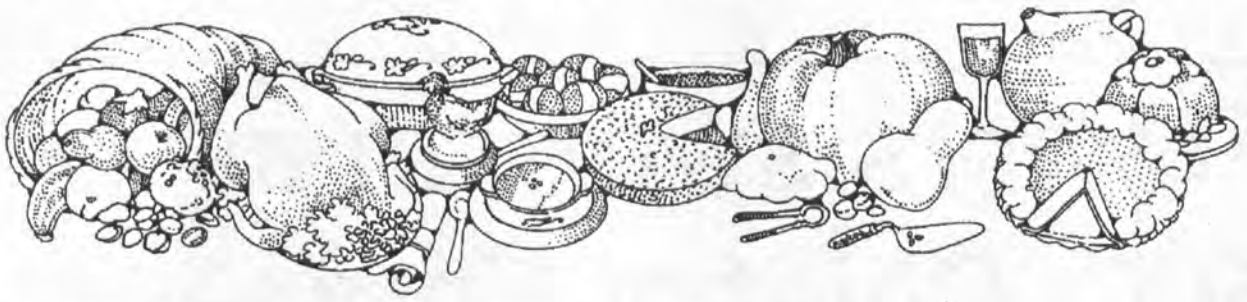
Other changes

The oversight role of the Army secretariat is being expanded as one part of the changes to the FUDS program. Other initiatives include developing a comprehensive business plan that identifies requirements and funding to complete the program, and issuing revised FUDS program guidance.

Insights

Remember to thank those around you

By Col. Lowell Moore
Chaplain, U. S. Army Corps of Engineers



Many years ago I heard a story that really made an impression on me. Not only was I impressed enough to remember the story all these years, but I was impressed enough to change the way I gave thanks to others.

The story went something like this — a man was pheasant hunting in western Kansas when he noticed two male pheasants engaged in a vicious fight several hundred yards away. They were going at each other with so much energy that they were stirring up a small cloud of feathers and dust.

After watching for awhile, the hunter noticed a small irrigation ditch that ran from his vantage point to a spot close to where the pheasants were fighting. He decided to see how close he could get to the fighting birds without being discovered.

He got down in the ditch on his hands and knees and crawled to the spot near the fighting birds and then, ever so slowly, he eased his head up for a peek. The birds were so involved in their fight that they hadn't noticed the approaching hunter, and they continued in their quest to beat the other into submission.

The hunter, surprised with his good fortune, decided to push his luck and see if he could actually take one of these birds. He eased up his gun, aimed, and fired. At the crack of the gun, one of the birds dropped dead, but what happened next is what really surprised the hunter.

The remaining pheasant, undaunted by the roar of the gum, immediately jumped on the chest of the dead bird, flapped his wings, and began crowing as if to say, *"Look what I did!"*

When I first heard the story, it brought a smile to my face and I chuckled at the arrogance of that stupid bird. I imagined that just before the crack of the gun, that pheasant thought he was in over his head and was worried about the potential consequences of the situation. He wished he had never started this fight in the first place and was hoping for a little help from somewhere. I doubt pheasants pray, but if they do, I'm sure this one was praying for some help.

Then when help came, the pheasant quickly forgot about his fear and took pride in the accomplishment even though it wasn't his.

The smile quickly left my face when I realized that I often act just like that stupid bird. How many times have I been in a situation that caused me to lose sleep worrying about getting the job done on time, or pleasing the boss, or failing in a way that would expose my shortcomings to everyone, and so on? Then after I have exhausted my personal resources, how many times would I, out of desperation, go to God or friends for help? And then how many times would I receive help and everything would work out?

I hope I didn't behave like that stupid pheasant, forget how I needed help, and fail to say thanks to God and those who have been there to help me when I needed it.

This little story has made me careful to thank those who pull me out of a tough spot, give me a word of encouragement, or help me in any way.

We are coming to the Thanksgiving season and I hope we see this day as more than an excuse to feel justified in gorging ourselves on a great meal. I also hope we don't behave like the stupid pheasant in my story and forget to be thankful for all those who have helped us.

This Thanksgiving, let us be thankful for more than the material bounty we enjoy. Let us be thankful for the people around us, the people who were there when we needed help, and the people who have encouraged us and helped us get where we are. I encourage each of you to pause a moment before you descend on that delicious Thanksgiving meal to thank the one who worked hours to prepare it, the one who faithfully went to work to provide it, and God for the ability to work.

Then dig in and enjoy!

(The views expressed in this article are those of the author and do not reflect the official policy or position of the U.S. Army Corps of Engineers, the Department of the Army, the Department of Defense, or the U.S. Government.)

L.A. District builds new home for F-22s

By Herb Nesmith
Los Angeles District

The U.S. Army Corps of Engineers is building a new home for the F-22 Raptor, the Air Force's next-generation fighter. Construction is underway on a $15.7 million contract to build maintenance and testing facilities for F-22s based at Nellis Air Force Base in North Las Vegas, Nev. Scheduled to be finished in June 2001, it is part of the Corps' military construction program in support of the Army and Air Force.

"The F-22 is going to be the air-dominance fighter of the 21st century, said John Haire of the Air Force Flight Test Center at Edwards Air Force Base, Calif. "Called the Raptor, the plane packs a mix of maneuverability, stealth, and general lethality that no other fighter in the world can equal."

The first phase of the project is to remove asbestos and lead paint from a World War II-era hangar, and then demolish the structure to make way for the new construction. The contractor, the Tucson Building Division of Sundt Construction, Inc., will build a new 40,335-square-foot maintenance hangar and a 9,415-square-foot parts storage facility on the site.

The contract calls for the partial demolition of two nearby buildings and renovation work to convert them into a composite fabrication shop and additional storage space.

Doug Tillman of Los Angeles District's Arizona-Nevada Area Office in Phoenix is managing the project for the Corps. Kelly Ryan was the initial project manager. "He got the project going," Tillman said.

The F-22 Aircraft Maintenance Hangar work is the second project Sundt's Tucson Building Division has received under a Multiple Award Task Order Contract from Los Angeles District.

Sundt Construction, which has been in business for more than 100 years, is the largest general contractor based in Arizona. The employee-owned firm builds a variety of projects for private and public clients throughout the U.S.

The F-22 will be the Air Force's next-generation fighter. (Photo courtesy of the Air Force)

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What is a veteran?

Except in parades, those who kept America safe wear no emblem. You can't always recognize a veteran by looking.

What is a veteran?

He is the cop on the beat who spent six months in Saudi Arabia sweating two gallons a day making sure the armored personnel carriers didn't run out of fuel.

He is the barroom loudmouth, dumber than five wooden planks, whose overgrown frat-boy behavior is outweighed a hundred times, on the cosmic scale, by four hours of exquisite bravery near the 38th parallel.

She (or he) is the nurse who fought against futility and went to sleep sobbing every night for two solid years in Da Nang.

He is the POW who went away one person and came back another.

He is the Parris Island drill instructor who has never seen combat, but has saved countless lives by turning slouchy, no-account rednecks and gang members into Marines, and teaching them to watch each other's backs.

He is the parade-riding Legionnaire who pins on his ribbons and medals with a prosthetic hand.

He is the career quartermaster who watched the ribbons and medals pass him by.

He is one of the anonymous heroes in the Tomb of the Unknowns, whose presence at Arlington National Cemetery forever preserves the memory of all anonymous heroes whose valor died unrecognized.

He is the old guy bagging groceries at the supermarket, palsied now and aggravatingly slow, who helped liberate a Nazi death camp, and who wishes all day long that his wife were still alive to hold him when the nightmares come.

He (or she) is an ordinary, yet an extraordinary, human being -- a person who sacrificed life's most vital years in the service of our country, and who sacrificed ambitions so others would not have to sacrifice theirs.

He is a savior and a sword against the darkness, and he is nothing less than the finest testimony on behalf of the greatest nation ever known.

So remember, each time you see someone who served our country, just lean over and say "Thank you." That's all most people need, and in most cases it will mean more than any medals they were awarded, or could have been awarded.

Two little words that mean a lot -- **"Thank you."**

(Author unknown. Submitted by Dr. Fred-Otto Egeler, Public Affairs Officer of Los Angeles District.)

The sinking of the "Rohna"

World War II tragedy is virtually unknown

By Michael Logue
Vicksburg District

Few people have heard about the sinking of the *Rohna*, or the 1,105 American soldiers who died in the worst at-sea disaster in U.S. history. But Charles "Dutch" Beard, a retiree from the U.S. Army Corps of Engineers, has not forgotten. He was on the *Rohna* when a German guided missile sank her during World War II.

The HMT (Her Majesty's Transport) *Rohna* was a dilapidated old British merchant vessel converted to a troopship. She sailed from Oran, Algeria, bound for Bombay, India, carrying 1,981 U.S. soldiers, including Beard, a young lieutenant in the 853rd Aviation Battalion. The *Rohna* also carried seven Red Cross personnel, and 195 Indian crewmen and British officers.

The *Rohna* was part of convoy KMF-26. On Nov. 26, 1943, about 30 Luftwaffe bombers attacked the convoy. Several of the Hinkel 177 long-range bombers carried two Hs293 remote-controlled glider bombs, one under each wing. The Hs293 was, in effect, the first air-launched cruise missile. A rocket engine launched the bomb away from the bomber, then it glided toward its target under remote (radio) control.

One of these weapons struck the *Rohna* on its port side just above the waterline, the first successful war-strike by such a weapon. It exploded in the engine room, blowing a huge hole at the waterline on the opposite side.

The old *Rohna* sank in less than an hour. The sinking claimed 1,015 U.S. servicemen, three Red Cross workers, and 134 Indian crewmen and British officers, making it the worst at-sea disaster in U.S. history.

And Beard was headed for 12 hours of hell.

"The first thing I did was pick up all the life vests that I could that were floating near me," he recalled. "I had one around my waist and one under each arm. I had that much sense about me."

Most of his comrades were not so lucky. "Some were killed by the blast. Some just gave out."

Beard was rescued by a British destroyer, the *Holcomb*, and he was apparently the last survivor picked out of the water. He spent 17 days in the hospital before being recalled to the 853rd Aviation Battalion, an engineer unit which was to build airfields and anything else needed in India. But Beard's troubles were still not over.

"I was wearing a British uniform they had given me at the hospital and was picked up by the military police for being out of uniform," he said. His commander secured his release.

For security reasons, the War Department immediately suppressed all news of the *Rohna* catastrophe. As company commander, Beard was the assigned the duty of writing letters to the families of his fallen buddies.

Charles "Dutch" Beard as a young engineer office during World War II (left), and today. (Photos courtesy of Vicksburg District)

"Everything was so secret that I couldn't tell them what had happened to their loved ones." The only thing Beard could write, the only thing *any* notification letter *ever* said, was that the victim was "killed in action" or "missing at sea and presumed dead."

After the war and the successful completion of their mission in India, Beard returned to Vidalia where he had worked for the Corps before the war. He came home with a Purple Heart and a raging case of malaria.

"I had it so bad I had to go to the hospital in Natchez," Beard said. Lucky for him. With a fever of 106 degrees, Beard asked his attending nurse to marry him. She accepted and became his wife.

Beard quickly returned to work with Vicksburg District, staying until his retirement in 1976. Then he continued to work with contractors until about 1990.

The U.S. government maintained the secrecy around the sinking of the *Rohna*. The story didn't surface until the mid-1960s. In the early 1990s, the survivors and the victim's families began to obtain the details under the Freedom of Information Act. On May 30, 1996, a memorial to the *Rohna* was dedicated at the Fort Mitchell National Cemetery in Seale, Ala.

So, Beard is now something of a celebrity in the community and has been featured in the newspaper several times recently. His loyalty to the Vidalia Area Office runs deep. "I still have coffee down there every morning."

And daily he remembers his buddies from the *Rohna*, keeping alive the memory of those who never made it to India and never made it home.

(Bernard Tate, the editor of the "Engineer Update," also contributed to this article.)

Los Alamos

Corps builds flood control structures in wake of fire

By Capt. Tom Tickner
Sacramento District

The Cerro Grande fire in New Mexico that destroyed 48,000 acres and left hundreds homeless in May has been out for more than three months, but its aftermath was felt long after firefighters extinguished its flames. Post-burn conditions severely altered the hydrology of the area, causing an imminent threat of flooding from monsoon rains, which could result in excessive storm water runoff near the Los Alamos National Laboratory (LANL), the city of Los Alamos, and adjacent pueblos.

In response to that potential disaster, more than 80 U.S. Army Corps of Engineers employees were called in from all over the nation to assist Albuquerque District in studying, designing, and executing emergency flood prevention measures.

Corps involvement and missions

Initially, the Corps only provided temporary housing for the fire victims of Los Alamos. However, acting on requests from local and federal agencies, project manager Cheryl Buckle of Albuquerque District and a team from around the country began work on a flood fight plan. Their goal was to identify vulnerable areas and recommend protective actions.

"In some cases, the predicted post-fire discharge was up to 10 times greater than pre-fire flows," said Marie Vanderpool, a Corps hydrologist from Kansas City District. Their around-the-clock work provided critical information within nine days and a final report by July 12.

The results clearly showed that Los Alamos County, two local Indian pueblos, and the Department of Energy's (DoE) Los Alamos National Laboratory needed an immediate response. The Cerro Grande fire also affected Albuquerque District itself. David Griego, Albuquerque District's project manager for Cochiti Lake, installed three log booms for debris protection, and he is monitoring the water quality for radioactive nuclei.

Due to the complexity of the environment, and the unique national security mission of LANL, Albuquerque District established the Los Alamos Fire Recovery Office. This office served as the forward headquarters and central information point responsible for public affairs, environmental issues, and coordination with five customers and many other agencies involved in 21 emergency projects. Each project and customer was unique and each had varying desires, but all directly affected each other due to the area's hydrology.

"This is the type of challenge I hoped I'd find on my first emergency management dispatch," said Mark Cohen of Los Angeles District, an assistant in the Fire Recovery Office. "It's very rewarding helping people in need."

Temporary housing

The Corps gave Los Alamos County 114 temporary homes for families whose houses were destroyed by the fire. Once their homes are rebuilt, the Federal Emergency Management Agency plans to remove the temporary homes and give them to local Indian pueblos for much-needed teacher housing.

Project engineer Dennis Hughes of Huntington District, along with fellow Planning and Response Team (PRT) members, completed the project July 7.

Diamond Drive 86-inch Culvert

Los Alamos County and the Corps identified a 1940s landfill bridge in danger of failure. This structure services about 19,000 vehicles daily and links the southern half of Los Alamos to hospitals and the main town. It is 120 feet high, 425 feet long at the base, 85 feet wide at the crest, and can impound 814 acre-feet of water. An 18-inch culvert provides drainage.

This flood retention structure at Pajarito Canyon will protect Los Alamos Technical Laboratory. (Photo courtesy of Sacramento District)

The fire eliminated 95 percent of the vegetation in the watershed directly above the landfill bridge, and the culvert clogged immediately with the increased runoff and sediment.

The Corps' solution was an emergency operation to install an 86-inch steel pipe 432 feet through the embankment. Albuquerque District's project engineer Roger Torres, and project manager Eric Fino began the "jacking and boring" operation (a form of tunneling) on July 7 and punched through on July 15. The flood flows now pass through the completed culvert, protecting the road embankment and the downstream from a breach failure.

Pueblos

The Cerro Grande Fire affected Native American lands on the Santa Clara and San Ildefonso pueblos. Many of their canyons have already experienced erosion from the increased runoff.

Ron Kneebone of Albuquerque District, project manager for work at the pueblos, is executing 15 flood prevention projects. These include strengthening an existing levee system, installing grade control structures, upgrading low-water crossings, and installing protection around facilities.

"We've already provided protection for life and property," Kneebone said. "The tribes are happy with the Corps' performance, and this work has strengthened our relationships with them."

Los Alamos National Laboratory

The Corps identified and executed five flood-risk-reducing design-build projects under Kris Schafer, project manager from Albuquerque District, and Bob Kreienheder, resident engineer from Kansas City District. The Corps directed Sundt Construction Company, headquartered in Arizona, to design and build three projects to harden existing structures, one to retain sediment, and one to protect a downstream nuclear facility from a 100-year storm event.

This low-head weir across Los Alamos Canyon will help contain contaminated sediment. (Photo courtesy of Sacramento District)

Existing structures — Joe Russell, project engineer from Portland District, supervised three projects to reduce the risk in flooding and erosion of contaminated sediment downstream. The Corps strengthened the crest, and the upstream and downstream portions of the Los Alamos Dam with shotcrete and articulated concrete matting. An abandoned land bridge then received attention. Shotcrete was applied to the upstream face and a spillway was engineered into the hydrology plan. The third project similarly strengthened a main travel route, New Mexico State Highway 4.

Sediment retention — Mark Clark from the Rock Island District, the Corps' project engineer on the "low-head weir" project, supervised construction of the sediment retention structure. "This 13-foot high, 200-foot-long rock gabion structure is built across the bottom of Los Alamos Canyon," Clark said. "High flows

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Hard-hat saves dam worker's life

By Jennifer Wilson
Little Rock District

Hard-hats are as common in the U.S. Army Corps of Engineers as the castle image. For most people, those plastic helmets are probably just part of the scenery. But for one powerplant mechanic who fell more than 20 feet from an unprotected ledge at the Dardanelle Powerhouse, a hard-hat made a difference. Although hard-hats are not designed to protect against lateral blows, this one did and prevented serious injury or death.

The accident also led to improved fall protection at the powerhouse.

Richard Duck was working with James Nearn, the power plant senior mechanic, and Dino Cossey, a contractor with Voith Hydro, to find a leaky pipe in the Unit 2 turbine pit. The three had examined the pipe just outside the turbine pit, but didn't find any problems. Duck volunteered to go into the turbine pit area to look at the other end of the pipe for the leak.

Richard Duck's shattered hard-hat shows the force which it absorbed. (Photo courtesy of Little Rock District)

Turbine pit

To reach the pipe, Duck entered the turbine pit through a door on the opposite side from the pipe. He climbed a small, two-rung ladder at the entrance to get to the generator apron. Duck had to walk along this apron ledge to get to the pipes.

The ledge is only four feet wide, and only four-and-a-half feet of head-room. Duck stands six feet tall, and had to bend to walk along the ledge. He got to the middle of the generator apron, then hit his hard-hat against one of the reinforcement ribs on the ceiling of the apron. The blow knocked his hard-hat over his eyes, and he became disoriented and lost his balance.

'Done deal!'

"Before I realized it, I was over the edge," Duck said. "I tried to grab hold of something, but I couldn't. I thought to myself, 'Well, this is a done deal!'"

Duck fell over the ledge and landed between the steel wicket gate arms 20 feet below. During the fall, Duck lost his hard-hat, but he kept it on long enough to prevent serious injury. He received a gash on his forehead, but the front and the back of the hard-hat were shattered. He also received bruises and a cut to his right palm.

Cossey was still working outside the turbine pit when he heard a bang and went to investigate. When he entered the turbine pit, Cossey could see Duck's hard-hat on the floor. Then he saw Duck between the wicket gate arms.

Cossey yelled for Nearn to get assistance, and stayed with Duck. Troy Tate, a power plant mechanic and paramedic, administered first aid while waiting for the Yell County Emergency Medical Service.

The ambulance transported Duck to Saint Mary's Hospital in Russellville. He is now resting at home and undergoing physical therapy, and he is expected to return to work.

"The hard-hat saved his life," said Clarinda Harvey, industrial hygienist with the Little Rock District Safety Office. "Duck, at some point during the accident, received a major blow to the front of his head. The hard-hat, held on momentarily by the earmuffs, took the force before it shattered."

Lessons

There were two direct causes of the accident — improper access to the site, and the lack of fall protection.

"Risk assessment and risk management are two principles that the Corps is emphasizing these days," said Brian Becker, a safety engineer in the Headquarters Safety and Occupational Health Office. "Mr. Duck was entering a cramped area with a narrow ledge, a long drop-off, and no fall protection. We all need to take a step back whenever we come up against something that looks risky, and think about the smartest direction to take."

Solutions

Little Rock District took immediate steps to install temporary safety measures, and they are working on a permanent safety solution.

The immediate solution was to install a tie-off cable around the perimeter of the concrete ledge so employees can use fall protection while they work. Research, specifications and drawings were completed in short order, and information was faxed to five prospective bidders on Aug. 5, with a request for their responses no later than Aug. 21.

The project office explained the urgency of the situation to staff in Contracting Division, and an information packet with the bidder responses was forwarded.

"Contracting promptly responded by reviewing and awarding the contract as soon as possible," said Bob Coke, a civil engineer with Russellville's Navigation Branch.

Industrial Safety Source began installing the lifeline systems on Sept. 18, and completed the job three days later. They also provided training in using and maintaining the equipment.

Protecta International designed the lifeline system. It runs the circumference of the wall behind the generator bearing beam apron and is designed to provide fall protection for two employees working together in the area.

"With this system, the contractor provided shuttles (sliders that move back and forth on the cable) that allow workers to tie off and still move freely around the area without having to unclip and re-clip to move from area to area," Coke said.

Southwestern Division's safety officer has suggested that a copy of the specifications for the fall protection be shared with other districts and used where needed.

The district's Engineering and Construction Division also is working on a permanent solution to make the area safer. This will probably include installing grating over the openings around the perimeter of the ledge. A design is planned for fiscal year 2001.

Los Alamos

Continued from previous page

in the canyon that may contain contaminated sediment will slow down behind the structure, sediment will settle out, and then runoff will pass over and through the gabion structure."

Nuclear facility — By far the largest, most difficult undertaking was the design and construction of a roller compacted concrete (RCC) flood retention structure in Pajarito Canyon. It will protect the laboratory's Technical Area 18, a nuclear research facility downstream. The national security component of the project gave it added urgency. The structure not only protects against flooding, but also against sediment runoff. Equally critical, it provides protection to allow national defense operations to continue at Technical Area 18 in any weather.

Dwight Gill from Portland District was the Corps' project engineer for the RCC flood retention structure. He supervised the around-the-clock construction of this massive undertaking:

- Height -- 70 feet
- Base length -- 215 feet
- Crest length -- 390 feet
- Crest width -- 20 feet
- Outflow -- Restricted to less than 400 cubic feet per second

Sundt Construction Co. received the "go-ahead" with the design-build structure on June 26 and they completed the 100-year protection level on Aug. 28. The project was completed Oct. 7.

"A project of this complexity can take years to develop from concept to design to construction," said Kreienheder. "We did it in just over 90 days."

Sundt's area manager, Mike Sick said, "We all pulled together as a team (Corps, DoE, LANL, and URS-Greiner, Sundt's design-build architect) and solved each issue quickly."

"The project posed a number of challenges for us, including performing the engineering, the construction mobilization, and overcoming the laboratory's security issues," Schemer said. "Escorts were assigned to every construction crew, so not having free access was a challenge."

But DoE was still impressed by the operation, according to Vozella. "Within days of requesting assistance, the Corps moved in and began executing large infrastructure design-build projects," he said. "DoE and LANL focused on smaller facility and utility protection projects and rehabilitation of burned areas on DoE lands."

With most of the emergency work complete, we can reflect on what was accomplished. The Corps team executed more than $20 million in emergency work for a variety of customers in only about 90 days.

"All team members who supported this effort were superb and are the true heroes of this success story," said Col. Raymond Midkiff, Albuquerque District Commander. "Without them, we would still be trying to complete this important work. We can't thank them enough for their hard work and dedication during the past three months."

For more information, see the project website at www.spa.usace.army.mil/cgfffe.htm.

(Capt. Tom Tickner is the officer in charge of the Los Alamos Fire Recovery Office in Sacramento District.)

The missile silos are designed for the missile interceptor's booster rocket. (Photo courtesy of Huntsville Center)

Divers were needed for the hazardous job of sealing and pumping out the missile silos. (Photo courtesy of Huntsville Center)

Remote silos support missile defense

By Bob DiMichele
U.S. Army Engineering and Support Center

It's not easy building missile silos for testing interceptors that are still in development for the National Missile Defense program. Build those missile silos in the Pacific Ocean 2,100 miles from Hawaii, and you get a challenge that requires unusual amounts of coordination, partnering, and planning. Then add that the silos must be built on an island already actively used to launch test flights, and a lot of care is needed as well.

The National Missile Defense test and evaluation program is designed to provide the necessary data to develop an effective missile defense system. The program involves a number of systems. A target is launched out of Vandenberg Air Force Base, Calif. It is acquired and tracked by radar systems. The ground-based interceptor is launched from Meck Island, part of the Kwajalein Missile Range in the mid-Pacific Ocean. The interceptor (called an exoatmospheric kill vehicle) receives guidance and target data from communications systems. After separating from its booster rocket, the kill vehicle uses its on-board sensors to find the target and positions itself to destroy it.

So far, the program uses the Minuteman III intercontinental ballistic missile for the booster rocket to test-fly the kill vehicle. As development progresses, the new booster being developed for the anti-missile system will replace the Minuteman III surrogate.

A joint effort by the U.S. Army Corps of Engineers, the Ground Based Interceptor Project Office, and Boeing, the prime contractor for National Missile Defense, led to building two missile silos on Meck Island to fit the booster rocket's final configuration. Design and construction of these silos was expedited because of a deadline within the National Missile Defense program for booster rocket validation tests, according to Mike Stahl, project manager at the U.S. Army Engineering and Support Center in Huntsville, Ala.

Huntsville Center managed the silo design. Black and Veatch, under contract to Huntsville Center, designed the concrete silo. Honolulu District provided construction contract procurement and management, and the district's Kwajalein Resident Office on Kwajalein Atoll provided on-site quality assurance and safety oversight. Dick Pacific, under contract to the district, actually built the silos.

Bechtel was the subcontractor to design and build the sleeve that slips into the silo, and the adjacent silo instrumentation vault. After construction, these items were shipped by the government and provided to Dick Pacific as government furnished equipment.

The silo is designed to accept the interceptor in its final configuration, so that when the real boosters are tested, the silos will be ready, Stahl said.

Steel sleeves were built in the U.S. and shipped across the Pacific Ocean by barge for the project. (Photo courtesy of Huntsville Center)

Black and Veatch started the design in November 1998 and finished in February 1999. The Honolulu District awarded the construction contract in June 1999, gave notice to proceed in July 1999, and completed the project last July.

Stahl said there was a constant interface challenge during the design and construction processes that required intense schedule and technical coordination. Of course, it was important for the silo and the metal sleeve that fits inside to mesh precisely.

"Both designs were developed concurrently but we (the Corps) were scheduled to finish our design before Bechtel's design was completed," said Elaine Wales, Huntsville Center's technical manager for the project. "We had to bring in their design and match it up with Black and Veatch's work."

The steel silo sleeve was fabricated at the Oregon Iron Works, and shipped to Meck Island in two pieces because of the logistics involved in shipping a 70-foot long tube. Dick Pacific fabricated the concrete liner on the island. Stahl called the schedule coordination "intense" to move two 50,000 lb. sleeve pieces by barge across the Pacific in time for placement.

Once on site, the sleeve pieces became government furnished equipment so the construction contractor could actually build the silos. Of course, on an island of just 55 acres, there is limited space for an equipment staging area.

Scheduling was complicated because excavating the silos was more difficult than anticipated, and because of ongoing interceptor tests. Excavation and construction at this remote island presented several difficult challenges requiring ingenuity by Dick Pacific, and careful oversight by the Corps, according to Honolulu District project manager Rodney Leong. These included the hardness of the coral, working underwater in silty zero-visibility conditions, and occasionally working at night so missile operations could continue during the day.

The silos were built at the north end of the flat 55-acre island. The process included driving sheet pilings to 80 feet and excavating coral hardpan within a 24-foot-square area inside the pilings. Then, sections of pre-cast 14-foot-diameter concrete shaft liner were placed inside the pilings and, finally, the 10-foot-diameter, 70-foot-long silos went inside the liner.

Dick Pacific had to excavate 3,400 cubic yards of dense coral for both silos, so hard that it broke several piledrivers. Then the excavators hit water 40 feet down, requiring the use of divers. Honolulu District Dive Team Coordinator Dan Meyers oversaw the contractor's diving operations, ensuring that the personnel, methods, operations, and equipment all met Corps' safety requirements.

To avoid the impossible task of pumping the Pacific Ocean, which flowed through the porous coral into the construction area, divers placed and leveled aggregate fill to the proper elevation. The contractor then lowered a pre-cast concrete bottom slab into place.

Leong said Dick Pacific attached waterproofing material to the pre-cast concrete base and to the joints of the pre-cast concrete shaft liner. The precast foundation was set in place and the divers confirmed levelness. Next, the concrete shaft liners were place on top of the foundation in seven-foot-high sections until the top of the sections was above the water table. Then concrete was placed on the bottom concrete liner using a tremie (a pipe to pump concrete into a casting form), and the joints were sealed. Then they pumped the concrete shaft dry.

"It was a credit to all concerned that such a hazardous job was completed with no lost-time accidents," Leong said.

While construction posed hazards, there were also

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Contract benefits neighborhood, fort

Article by Diana Bailey
Photos by Bill Brown
Norfolk District

Norfolk District has awarded the largest construction contract in the nation under the Small Business Administration's HUBZone Program. The Arriba Corporation of Norfolk, Va., got the award, a $4.3 million contract to build a consolidated learning center at Fort Eustis, Va.

The learning center will provide a central educational facility for soldiers. It includes classrooms, a library, testing facilities, computer and study areas, and break rooms.

HUBZone

HUBZone is an acronym for historically underutilized business zones. A Congressionally-mandated program signed into law in 1977, the HUBZone program awards contracts to areas of the country that are experiencing high unemployment and low economic development. To qualify as a HUBZone, the area must be designated as such by the Department of Housing and Urban Development.

Contractors such as Arriba must meet four basic criteria to compete for HUBZone contracts:

- They must be a small business as defined by the SBA.
- The owner must be an American citizen.
- The company's main office must be in a HUBZone.
- At least 35 percent of the company's employees must reside in a HUBZone.

With the award, Arriba plans to recruit workers in Lackey, Va., the HUBZone nearest to Fort Eustis, to augment its 12- to 14-member workforce. According to Robert Charles Bostic, vice president of Arriba, "Our construction supervisor is going to make a visit and put out a flyer to hire extra employees" with certain trade skills needed to build the learning center.

Bostic added, "I think it's a great program because it puts work in the areas and for the people who need it."

Hard work and praise

Brig. Gen. Stephen Rhoades, the commander of North Atlantic Division, praised Norfolk District's achievement. "I'm excited about it because, first of all, it assists us in meeting the goals the Army has given us. Number two, I understand it's a most difficult goal to achieve."

Arriba Corp. renovated a building in the HUBZone and located their main office there. From left to right are Jack Beecher, Norfolk District Deputy for Small Business; Donna Shepard, Arriba's bookkeeper; Robert Bostic, Arriba's vice-president, and Sonia Wright, Arriba's contract administator.

Lackey, Va., is a HUBZone, an area of high unemployment and low economic development. Workers to build the learning center will be hired from here.

Rhoades also wants to incorporate Norfolk District's methods for achieving this teamwork as a model. "It didn't happen by itself," Rhoades said. "I know this took an extraordinary amount of teamwork to turn it into a HUBZone award, and then award it on time and within estimate."

According to Jack Beecher, Norfolk District's Deputy for Small Business, bringing the whole district project delivery team together before the award was key.

Something different

"We're doing something different," Beecher explained. "We got the field construction reps, engineering division, project management folks, and the customer involved in the contractor selection. We brought Arriba into the district and they made a presentation to the team, which included the customer.

"That was followed by a visit to their office to get a warm and fuzzy feeling about his actual operation," Beecher continued. "Col. Carroll (Norfolk District commander) even went. The main thing we wanted to make sure was that the firm could perform the project because we knew that if he failed, it was going to be bad news for the district, the contractor, the customer, and the HUBZone program."

Revitalization

One of the HUBZone program's goals is to start a chain of revitalization that enhances the community. "Arriba moved into a dilapidated building and renovated it," Beecher said. "That encourages other companies to do the same thing,"

"You can physically see the undeveloped portions of that area of Norfolk," Beecher continued. "It gives you a real understanding of what these dollars are going to mean to that area. The people working for Arriba and living either in Norfolk or in other HUBZone areas are most likely going to take back what they earn and spend it in their neighborhoods, and that's also going to benefit their community. I really feel that, in a small way, Norfolk District is helping the people and areas who need it most."

Missile silos

Continued from previous page

periods when the missile flight tests involved hazardous operations, and the construction crew had to work different shifts to accommodate the test program safety requirements. Sometimes, workers even had to leave the island, including three days before the actual launch of a flight test.

Honolulu District construction contract administration including quality assurance and safety oversight provided by Kwajalein Resident Engineer Lou Askew and construction representative Marty Olson, together with safety chief Roger Blankenship.

Construction activities brought other concerns besides the technical and safety challenges. "We had to stop pile-driving at one point because we were causing vibrations in the silo where the surrogate booster would be launched," Stahl said. "There was one scheduled integrated flight test during the construction of the new silos, and the sensitive gyroscopes on the exoatmospheric kill vehicle indicated that we were causing the vehicle to shake." The Corps stopped work for 41 days so that silo construction would not interfere with the tests.

During that time, work continued on ancillary projects such as extending a missile assembly building to accommodate the new interceptor, and road widening to accommodate the turning radius of the missile transporter.

Close coordination throughout the project between everyone involved was a key factor in the success of the project, according to Stahl.

Besides site construction, requests for information (RFIs) posed difficult coordination challenges throughout the project. Partners were scattered throughout the U.S., and there is a seven-hour time difference between Huntsville Center and the construction site.

"Everybody saw everything, despite the fact that often there was a 24-hour turnaround on RFIs," Wales said. Coordination and planning had made the difference.

Beginning in fiscal year 2001, the National Missile Defense Program will conduct three integrated test flights per year. The new silos will be a key factor in the success of those test launches, Stahl said.

(Rodney Leong, Honolulu District's project manager, also contributed to this article.)

Bonneville has own emergency team

By Jim Edwards
Portland District

There are lots of things to see at Bonneville Dam this summer. There are the ever-popular fish ladders and underwater viewing windows, the breathtaking scenery and the engineering marvel that is the project itself.

One thing you *don't* want to see at the dam is BERT, unless you get into trouble. Then BERT is the *first* thing you'd hope to see.

The Bonneville Emergency Response Team (BERT) is a life-saving program on the cutting edge of efforts to provide better service for visitors at Portland District projects. The BERT program takes volunteers and puts them through 64 hours of emergency medical training that goes way beyond basic first aid. Once through the training program, graduates are qualified as 'first responders.'

The BERT program began at Bonneville in 1996, and so far everyone agrees that it was a good thing. "We needed it for a long time," said Carl Zerfing, iron worker, rigger, and paramedic at Bonneville. "The new management recognized this. They saw a need and had us set it up."

Before the program, visitors and employees who faced an emergency had to rely on employees who just happened to have advanced medical training in addition to performing their regular jobs at the project.

"Carl Zerfing and I used to get a lot of calls," said Jennifer Sturgill, a biologist and emergency medical technician at the Bonneville project. "I'm an emergency medical technician and he's a paramedic, so we were always responding to emergencies."

The isolated nature of Bonneville Project means that in an emergency, those caring for a victim are left to their own devices until help can be summoned from the nearest medical facility, many miles away.

"During the summer we have about one incident a month," said Patrick Barry, supervising park ranger at Bonneville. "Most of our incidents are minor, but with the number of visitors we get here, we have a lot of potential for accidents and injury. That, plus our proximity to the freeway, makes this program a good idea."

Two Corps employees have already spent time as emergency volunteers. Scotty Burnett provided ambulance services on the Skamania, Wash., side of the project, and Zerfing did the same on the Oregon side. Ambulance calls often meant that one or the other had to take annual leave to answer emergency calls. While that still happens from time-to-time, the BERT program has provided some additional backup and relief for everyone involved.

"Carl and Jennifer sort of started it all," said David Snyder, a power plant electrician. He credits both with giving employees at Bonneville a real capability to save lives and minimize injuries to both visitors and fellow employees.

"They taught the classes," Snyder said. "We've had tourists slip and fall, and we've had painters overcome by fumes in the lower level of the navigation lock. Now we're able to respond to emergencies, do the first aid, and get them on the backboard. We can also use the portable defibrillators."

Since the last round of training classes last December, Bonneville can boast 23 trained first responders, all volunteers, with varied reasons for joining the program.

Flight nurse Sue Shidner teaches procedures for loading patients into a medevac helicopter.

BERT team members prepare to load Jennifer Sturgill onto the Life Flight helicopter.

"I decided to join because about a year ago I gave blood during a blood drive at Bonneville," said Laurie Lane, a painter. "I had a bad reaction and they called the BERT to check me out and make sure I was OK. I thought at that time that it would be a good idea to make sure we had enough trained people out here in case we need them."

> *"I love working with this program. We have a chance to really make a difference."*

Lane adds that there is a certain comfort level knowing that there are enough people on the job to adequately care for a number of victims. "They are great to have when you need them," she said. "I've always taken the first aid and CPR classes they've offered here. I have kids and there was always that thought of not knowing what to do in case of an emergency. Now I'm prepared."

"My wife was going through surgery about the time they offered the course last time," said Ed Tracy, a utility man at the project. "I thought the extra knowledge might come in handy. I just happened to be here when a lady tripped on a step and hurt her hip. We don't have a lot of incidents but, when we do, this is good to have."

"My Dad and brother are both firefighters," said Tammy Mackey, a fisheries biologist. "I thought it would be fun. My dad thought it would be a great idea, too. He was pretty excited about it and it gives us something more to talk about."

Mackey also found a practical side to the program. "I've only been on one call, and I thought the training was very useful," she said. "I feel much more comfortable, even when I'm not at work, responding to accidents."

BERT team members slide a stretcher into the helicopter.

"I'm new to the BERT program," said Barry. "I've taught first aid for 15 years, but first aid training is real basic. This is a higher level of training."

Besides increasing the skills to treat victims at the scene, BERT organizers have joined forces with other caregivers to increase the level of service to project visitors. One such partnership is with the Hillsboro-based Life Flight program. Three area hospitals joined forces to support a helicopter and crew that can be called to the scene to rapidly evacuate a victim.

"Life Flight is set up to reduce the time it takes to get a patient to a level one trauma facility," said

Continued on next page

Kevin Ewbank, lead park ranger at the Illinois Waterway Visitor Center, takes a personal watercraft on a high-speed run.

Workshop covers watercraft safety

Article and Photos
By Mark Kane
Rock Island District

Personal watercraft (PWCs), motorcycle-like waterjet-powered little speed-demons, are common sights on almost every U.S. Army Corps of Engineers lake. They are a lot of fun, but they can be dangerous if improperly handled.

For that reason, Rock Island District and the Personal Watercraft Industry Association (PWIA) co-sponsored a personal watercraft workshop behind the Mark of the Quad Cities on the Mississippi River on Aug. 29.

The educational workshop brought together federal, state, and local agencies, along with industry representatives, to discuss the issues and findings of recent Corps of Engineers/PWIA nationwide workshops.

"With the increasing popularity of personal watercraft on our rivers and lakes, this recreational sport has tremendously challenged traditional recreation management efforts," said John Punkiewicz of Operations Division. "The Corps has been working with the PWIA on a number of initiatives in other parts of the country to address and resolve the impacts of personal watercraft use. The workshop provided a unique opportunity for Corps personnel, other government entities, state and local boating law enforcement agencies, and local PWC suppliers to meet face-to-face with industry personnel to discuss specific issues related to the impacts of personal watercraft activities on our waters."

Don Bardole, a park ranger at the Mississippi River Visitor Center, briefs Emily Bowen, a park ranger at Lake Red Rock, about the operation of a personal watercraft.

Don Bardole, a park ranger in the Mississippi River Visitor Center, patrolled the waterway, while workshop participants took a personal watercraft out for a trial, some for the first time.

"For the people in enforcement, they're learning what it's like to ride a PWC as a beginner and some of the differences between operating a boat and a PWC," said Bardole. "In a boat you can still steer if you lose power. If you lose power in a PWC it's dead in the water. They're also learning that a PWC can float in shallow water and we can't get in there with our boats to help them. A PWC will draft at about eight inches, while our boats draft at about two-and-a-half feet of water."

After only a couple of minutes of riding a PWC, most of the participants understood why the watercraft are so popular, and why the public tend to get into trouble while using them.

"It's so easy to accelerate and so hard to slow down," said Emily Bowen, a park ranger at Lake Red Rock. "This helps me sympathize with the public just a little bit. There's a lot of 'wave runners' at Lake Red Rock and sometimes they cause trouble."

Currently, district park rangers don't use personal watercraft for enforcement, but Kevin Ewbank, the lead park ranger at the Illinois Waterway Visitor Center, feels they should.

"There's a lot of emphasis on community policing," said Ewbank. "The ability for a ranger to approach a crowd using a PWC, as opposed to one of our big boats, is much friendlier. We could use them to get out to the public more readily and educate them on how to use a PWC safely. That's an important use for them, not chasing people down in shallow water, which may be the perception of why we want them."

Emergency team

Continued from previous page

Sturgill. A trip by helicopter to one of the hospitals that participates takes minutes instead of hours.

BERT members train with Life-Flight crews to make sure both teams can work together effectively.

"One of the most important things they do for us is to choose our landing site," said Sue Shidner, a flight nurse with Life Flight. She and the crew of a Life Flight helicopter were at Bonneville for the latest round of joint training in early August. "It has to be free of obstructions. Wires, light poles, and trees are death for us. When we are coming into a landing zone, we need the BERT crew on the ground looking out for us."

During training, BERT members practiced securing and loading patients into the helicopter. The Life Flight crew later flew some BERT members around the project to get a feel for how things look to the helicopter crews from the air.

The team members get together to train and recertify their skills from time-to-time. "We taught the 64-hour class three years ago and again this last December," said Zerfing. He stressed that this is a true volunteer program. "We have riggers, rangers, electricians, painters, fisheries people, and biologists."

"Probably the basic CPR and learning how to use a defibrillator is the most valuable part of the training," said Mackey. She and others were grateful that managers and foremen at the project supported the program. That support has been fortunate for some accident victims, team members agree.

"I've only had to use my skills one time when we had a two-car accident on Highway 14," Lane said. "We were the first ones on the scene and there were multiple victims. They had back injuries, broken ankles, abrasions, and a kid with injured wrists."

Noting the success of the program so far, Sturgill and Zerfing are anxious to continue improving it at Bonneville and would like to see it expanded throughout Portland District and even throughout the Corps.

"Jennifer and I are going to start increasing the training so everyone at the project can use the portable defibrillators we have had for four years," Zerfing said. "Then we'd be glad to go to Portland and teach the First Responder class and bring everyone in the district up to the high standards of the Bonneville project."

Sturgill echoes Zerfing's enthusiasm for the BERT program and the need for similar programs at other Corps projects. She stresses the importance of having someone trained at the sites to administer emergency aid and work with crews from organizations like Life-Flight to get victims to treatment quickly and smoothly.

"I love being able to work with this program," Sturgill said. "Being this far out, we have a chance to really make a difference."

Project will replace historic bridge

By Ivan Damaso
New York District

Residents of the 14 New Jersey municipalities lying in the 65-square-mile Green Brook sub-basin of the Raritan River experience regular flooding. Monumental floods occurred in August 1973 and October 1996, causing deaths and costing millions of dollars in property damage.

Last year, Hurricane Floyd was called a "one hundred year" storm in most parts of the basin, but classified as a "five hundred year" event in Bound Brook. In the aftermath of the hurricane, towns were submerged in several feet of mud and water. Bound Brook was the hardest-hit community. This town has seen 16 serious floods since 1810, two of them in 1955.

During the eight to 10 inches of rain that came with Floyd in September 1999 (much of it within 12 hours), the Raritan River rose to a record high of 42.13 feet, thereby causing raging devastation. Flood stage is 28 feet.

To control flooding in the area, in 1986 Congress authorized the Green Brook Flood Control Project. New York District and New Jersey signed the project cooperative agreement (PCA) in June 1999, allowing construction to start this fall.

As an initial part of the project construction, the Corps is scheduled to replace the Green Brook Bridge, according to John O'Connor who heads the team for Planning Division. This bridge, also known as the East Main Street Bridge, Lincoln Boulevard Bridge, and the Bound Brook Bridge, spans Green Brook where it joins Ambrose Brook. The bridge crosses the municipal boundary separating the Borough of Bound Brook (Somerset County) from Middlesex Borough (Middlesex County). The New Jersey Historic Preservation Office (NJHPO) determined that the bridge is eligible for the National Register of Historic Places.

Artistic details like these will be preserved in the new bridge. (Photo courtesy of New York District)

The Green Brook Bridge, built between 1931 and 1932, is a two-span concrete elliptical deck arch bridge and is considered an excellent example of the graceful "City Beautiful" movement bridges. It includes four tall luminary pylons (essentially lampposts) each supporting a Colonial Revival copper luminary. The pylons themselves look almost Egyptian, but are considered an Art Deco interpretation of a Beaux-Arts style. The bridge includes a full-length balustrade, which is pierced with tall narrow arch shapes. W. Franklin Buchanan, who was the Middlesex County Engineer at that time, designed the bridge.

To accurately replace the bridge, the district was required to record the structure according to NJHPO guidelines. Lynn Rakos, Environmental Assessment Section project archeologist, noted that the documentation process included field surveying, photography, and archival research.

The report produced for the district by the Panamerican Consultants, Inc. of Buffalo, N.Y., provides an interesting tale of local and county politics in the early 1930s, as well as a discussion of construction techniques and styles of that period. Copies of this report have been distributed to libraries and historical societies in the Bound Brook and Middlesex areas as part of the Corps' public outreach. Copies are also on file with the district's Planning Division's Environmental Analysis Branch, and the NJHPO.

New York District worked closely with the NJHPO during the design phase of the project to ensure that the design was acceptable to all parties.

"The new structure will allow for sufficient hydraulic conveyance to minimize hydraulic losses and minimize sedimentation, while the design is in keeping with the historic nature of the bridge," said Yvonne Spraggins, Green Brook project manager.

Plans for the new bridge incorporate elements of the existing bridge design, including its unique balustrades and lamp pylons. Rakos said the historic copper luminaries will be reused on the new bridge.

Two brass plaques from 1931 and 1932 identifying the two counties and their Boards of Chosen Freeholders will be incorporated into the new structure, along with a new plaque indicating that the Corps replaced the bridge as part of the Green Brook Flood Control Project.

The environmental impact resulting from bridge construction is small, according to Megan Grubb, project biologist in the Environmental Assessment Section. "It is anticipated that less than 0.1 acre of freshwater wetlands will be disturbed," she said.

Trail reconnects people with river

By Jim Edwards
Portland District

In the millennia since humans first pulled a layer of bearskin hide over our frail bodies and drew a line separating us from nature, many of us have struggled to re-forge that link. There is something about that separation from our earthly surroundings that leaves us restless.

In the years since Interstate 84 was completed through The Dalles, Wash., in the upper reaches of the Columbia River Gorge, the townsfolk have felt cut off from the river they grew up with and which shaped a large part of their lives. They wanted the river back.

"It began at least 10 years ago in the planning stages," said Cliff Bennett, project coordinator for The Dalles Riverfront Trail, Inc. "But the idea had been around for a lot longer than that. There was a feeling that we had lost touch, that people were cut off from the river. A bunch of folks decided to put a trail along the riverfront."

And so began an endeavor that has so far taken a decade to partially fulfill. A group of ordinary citizens with an extraordinary drive banded together to reestablish a link to a part of their past. It isn't difficult to understand, as Dan Durow, community development director for The Dalles points out.

The Dalles Riverfront Trail winds along the Columbia River. Mount Hood is in the background. (Photo courtesy of Portland District)

"The reason The Dalles existed is because of access to the river," Durow said. "I moved here in 1977 and started to hear about people wanting to build a trail along the riverfront. The original idea probably has been around since the days when the railroad went in and then the freeway. At least back to the Fifties."

On Sept. 4, the people of The Dalles moved another two miles closer to their goal, thanks to U.S. Army Corps of Engineers employees at The Dalles Dam. They finished paving a section of the trail from the park at the southern end of The Dalles Dam, along the Columbia River, over Fifteenmile Creek, past Seufert Park, and out to the front gate of the project. The Corps' section of the trail officially opened on Labor Day.

"We had a really great turnout," says Teresa Cruz, a worker in the park ranger's office at the dam. "Work on this part of the project began about six years ago in the planning stages and groundbreaking began just 11 months ago. Everyone was really excited that we were able to finish this part of the trail."

The Corps' section of the riverfront trail brings the total completed so far to 4.3 miles, or just under half of the planned length. The finished sections are separated into three areas so far, one beginning with the Corps, the next roughly in the center developed by Oregon Department of Transportation, and the third built from the Discovery Center north toward the other two sections.

Enthusiasm for the project was evident even before the Corps' portion was completed. Terry Armentrout, operations manager for The Dalles-John Day Project, has been biking to work for some time, and for him a more formal trail is welcome.

"The trail is on my way to work," Armentrout said. "I've been doing this for 10 years now. It's a seven-mile trip one-way, and so far it is for all the right reasons. My resting heart rate is about 50 beats per minute, my legs are in great shape, and I don't emit any greenhouse gasses."

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Ranger Amy Johnson and Bucky Beaver ride in a parade during the Eastern States Exhibition. (Photo by C.J. Allen)

The New England District color guard appears at parades, changes of command, and other official functions. (Photo by C.J. Allen)

Corps rangers have many missions

By Ann Marie Harvie
New England District

Ranger Merlon Bassett plays an environmental game with a group of visitors. (Photo by Mark McInerney)

For many years, the park rangers of New England District have been the district's public ambassadors at flood control projects, recreation areas, and public events throughout the New England region. The work they do is typical of the rangers' missions throughout the U.S. Army Corps of Engineers.

New England District's park rangers operated an exhibit at the Eastern States Exposition (Big E), the sixth largest fair in North America, that ran this year from Sept. 15 to Oct. 1 in Springfield, Mass. Park rangers, who are usually the first and only contact the public has with the Corps, do more than just hand out information at state fairs. These committed individuals are also an integral part of the Corps' Natural Resource Management Program.

Park rangers at the Corps' flood control projects have duties in four main areas — natural resource management, recreation, visitor assistance, and interpretation. Other duties include flood control facility operations, maintenance, habitat management, and office administration.

Park rangers implement recreational programs and activities for the flood control projects. Some successful programs hosted at New England facilities include haunted dam tours, junior ranger programs, disc golf course, guided hikes, star-gazing tours, interpretive wildlife and history programs, environmental education camps for children, water safety programs, watchable wildlife programs, hiking outings, community group activities (model airplane groups, mountain men and Civil War reenactors, Girl and Boy Scout groups), structured off-road motorcycle races, horseback riding trips, and winter recreation like ice skating, dog sled training, cross-country skiing, and sledding.

Hidden gems abound at Corps projects. Community groups have used the recreation facilities for meetings, gatherings, camping, outings, and other group-sponsored events. Weddings have also been performed at the picturesque natural areas. Some Corps sites have also been featured in television shows and commercials.

Corps park rangers are also the primary operators of one or more flood control facilities or hurricane protection gate systems and, during floods, they use their knowledge of flood control regulations, together with expertise from the Reservoir Control Center, Basin Master Manual, and Flood Emergency Plan policies, to manage water storage and releases.

The most visible and well-known role of the Corps' park ranger is interpretation. The Corps has an extensive program that reaches out from the flood control projects to local schools and New England-wide events such as the Big E. Another recent major public event was OpSail 2000 held at the Cape Cod Canal in July. More than 750,000 visitors came to watch the tall ships sail through the world's widest sea-level canal.

New England District's Ranger Color Guard has marched in local parades and participated in official ceremonies carrying the American and Corps flags. Corps park rangers have organized successful environmental programs such as Earth Day activities and National Public Lands Day. They have also worked with programs that assist underprivileged children such as the Cooperative Federation For Educational Experiences (Project COFFEE), and environmental education programs with the Hodges Village Environmental Education Association.

About 2,500 volunteers work more than 10,000 hours at various Corps sites. Each of New England District's flood control projects has various volunteer programs available to all ages and levels of physical ability. The programs include annual clean-ups, administrative work, trail work, bridge building, wildlife observations and tracking, habitat enhancement projects, and facility improvement.

The park rangers also work closely with other New England District elements such as Hazardous, Toxic, and Radiological Waste; Navigation; Emergency Operations; Real Estate; Regulatory; Public Affairs; and Engineering and Planning.

Trail

Continued from previous page

Armentrout credits teamwork in moving the project along in the face of enormous physical and funding problems.

"It's a community effort," Armentrout said. "We're just a part of the whole. We were able to do this because of the cooperation of the Oregon Department of Transportation. They gave us pavement grindings recycled from state roadways, and we did the hauling. They would have had to pay to dispose of the material, so we scratched each others' backs."

"We've actually made a lot of progress this year," Bennett agreed. With renewed progress has also come new state grants, and even some money from Congress. "We'd like to have the trail done in three years. We really appreciate what the Corps has done. Terry and all have been great partners. They've been very supportive and very helpful."

"It won't change the way people commute overnight," admits Armentrout. "But we already have four employees who have given up cars and commute by bike."

If the response to opening the Corps' trail section is any yardstick, there is lots of enthusiasm for completing the project if the rest of the money, some $2 million, can be found. For now, residents, employees, and visitors to The Dalles Dam have one more way to be close to nature and the Columbia River.

Transplants

Corps people get second chance with donated organs

Article and Photo
By Ardis Moonlight
Louisville District

Susan Toutant appreciates life. For almost 12 years she was slowly dying of liver disease but, thanks to a transplant, she now has a second chance.

A tragedy and a miracle occurred the day of the transplant. In Lexington, Ky., the hospital staff did everything possible to save someone with a head injury. Tragically, they failed and declared the person brain-dead, paving the way for the miracle.

At the same time, Toutant wearily dragged through another day of terminal liver disease. It was a long day, but it wasn't over. She still needed to pick up her daughter, Elaine, and some of her friends who were spending the night.

On the way home, Toutant was so tired she considered canceling her plans for the next day. She planned to take the day off and shop with her sister, but extreme fatigue is one of many symptoms of severe liver failure. She knew she was close to liver failure and her time was getting shorter. She needed a liver transplant desperately, but first someone had to agree to organ donation. She had waited two-and-a-half years.

Fortunately, the family in Lexington agreed to the donation. The Kentucky Organ Donor Association reviewed the waiting list and decided this one would go to Toutant. One family was dealing with tragedy, but another had hope for the first time in years.

Liver disease. Toutant, a 43-year-old civil engineer with Louisville District for 20-plus years, first learned she had a medical problem in 1986.

"The Corps had many health programs going on then," said Toutant. "One was routine blood tests, which I took in the Corps' clinic. My liver enzymes were off the chart and they suggested I see my personal doctor.

"Two years later, a doctor determined I had primary sclerosing cholangitis," Toutant continued. "However, after he told me, it still didn't mean anything. Because we're an information family, my husband Roy did some research on the disease."

Toutant was shocked to learn she had a disease that was slowly destroying her liver. "Roy told me the bad news first," she said "I would have liver failure in 10 to 12 years. The good news was I could have a liver transplant."

The Toutants decided to not tell anyone about it. "I think, being faced with a life-threatening illness, I had to protect myself and went into denial. Roy kept researching the disease, and I kept trying to forget it. I'd remember what I had when someone asked about my goals. I'd shrug off the question, but inside my answer was 'To live.'"

So Toutant mostly turned to Roy when she needed to talk, "but sometimes I wished I had someone else to talk to," she said. "I thought about that occasionally, but my family and friends were having babies and weddings. A life-threatening disease just wasn't an easy topic to bring up."

What hit Toutant hardest was the fear that she would never see Elaine, then two years old, grow up. "I kept wondering what is a good age for a child to lose her mother," she said. "I couldn't come up with one."

Stewart Ballard and Susan Toutant are alive thanks to donated organs.

But liver disease will not let denial last forever. Eight years later, Toutant started throwing up what looked like coffee grounds. She had internal bleeding and spent four days in the hospital.

> *"I want to see my daughter change and grow."*

Now Toutant *had* to tell her family. "I was placed in intensive care and needed blood donations," she said. "My family was shocked and had a difficult time accepting I was sick. My sister, Carolyn, who also works at the Corps, asked my coworkers to donate blood and they kindly did so.

The next year the same thing happened, but this time the doctors couldn't wait for special donations and used blood from the blood bank. And they had difficulty stopping the bleeding. When the liver begins to fail, clotting protein stops working well. The doctors told Toutant to get on the liver transplant list. She was referred to Jewish Hospital in Louisville, and went on the list in March 1997.

Rating. There are several levels for transplant need:

- *Rating 1* — Will die in several days.
- *Rating 2A* — In intensive care.
- *Rating 2B* — Functioning but readings are high.
- *Rating 3* — Needs a transplant, but still living fairly normally.

Toutant was at the top of Rating 3.

In the two-and-a-half years before the transplant, Toutant's immune system constantly attacked her liver so she always felt tired, yet she continued working full time.

The call. Then, a year ago, while Toutant was on her way home from work, the phone rang.

"Roy was watching a football game and almost didn't answer, thinking it might be a sales call," she said. "He called on the car phone and told me they had a liver."

When Toutant learned there was a donor, all she felt was hope. "I had waited two-and-a-half years."

For liver transplants, the donor and recipient must have the same blood types and the liver must fit the recipient's body. Toutant stands 5'1" and weighs 120, so it was difficult finding a donor whose liver was small enough. "Several people below me on the transplant list received transplants before I did."

Respirator panic. She spent seven nights in the hospital in the intensive care unit recovering from the transplant surgery. She had 20 different tubes in her body, many for drainage. She was also on a respirator, and that was hardest of all.

"When I woke up and saw the respirator, I tried to just breathe through my nose, but my throat was all clogged," Toutant said. "I panicked. I felt I was choking and tried to push against the tubes around my nose."

The nurses and aides thought she was trying to pull out the tubes, and put her in restraints and sedated her. "Every time I came to, I'd struggle with the restraints and they gave me more medication. I hated those restraints. I felt so angry."

Toutant got off the respirator and they removed the restraints 18 hours after surgery.

It's been a year since Toutant had the transplant. Has her life changed?

"Physically I'm healthier," she said. She also takes 27 pills a day. Sixteen are to prevent her body from rejecting the liver. Seven are vitamins. Three are for another medical condition. And one is a Pepcid to keep from getting sick from the medication.

And psychologically?

"I don't think you can go through a life-threatening disease and not change psychologically," Toutant said. "I'm more thoughtful now and more futuristic in my thinking. I want to see my daughter change and grow. I want to continue to be a part of her life. I also want to do something to help other possible recipients who are waiting. I want to let others know about the donor program."

Toutant has volunteered for Kentucky Organ Donation Affiliates and has met many donor families. She wrote to her donor family twice, and wants to meet them.

Survival. She still doesn't travel, and works three days a week as special assistant to the branch chief in Louisville District's Projects and Programs Management. Toutant is grateful that the district has given her an office because she's susceptible to diseases while her white blood cell count is still low.

"I have to manage my energy, for I still tire easily," Toutant said. "Health is my number one priority. For exercise, I walk. I need to start load-bearing exercise to build up my bone mass."

Receiving a liver because someone died was difficult for Toutant.

"I struggled with this," she said. "This person died and I'm alive. Regardless of how happy I am about being alive, I'll always feel sadness for the family that lost their mother or father or brother or sister."

Throughout the experience, Toutant was awed by the kind people at the district, the support of family,

Continued on next page

Job-sharing gives best of both worlds

Article by Shannel Williams
Photos by Doug Spinks
New Orleans District

Michelle Daigle (left) and Vanessa Botts share the same job as civil engineers in New Orleans District

Michelle Daigle and Vanessa Botts have a lot in common. Both are married, both have young children. Both are civil engineers in the Technical Support Branch of New Orleans District.

And they both have the *same* job. Not that they do the same work in the same profession, but they actually *share the same job!*

It's called job-sharing, and the arrangement allows them to be both professional engineers *and* stay-at-home moms.

Daigle and Donna Bivona originally presented the idea to their branch chief five years ago. "We had to convince someone to try it," Daigle said. "It *is* different, and lots of supervisors were concerned if it would work."

Daigle job-shared with Bivona for four-and-a-half years until Daigle applied for another job-sharing position in Operations Division. For the past four months, Botts and Daigle have worked together sharing that position, even though they didn't know each other beforehand.

Daigle and Botts have interesting schedules that allow them to both work 20 hours a week. According to Botts, their supervisors have been supportive and flexible about the situation. Daigle works Thursdays, Fridays, and every other Wednesday. Botts works Mondays, Tuesdays, and every other Wednesday.

They both compile plans and specifications for dredging contracts, but have their own assignments. "She has her work and I have mine," Daigle said. "Work is totally separate."

This is Botts' first time job-sharing, but she hopes to continue until her children are out of school. "I get to spend more time at home with my kids, and their school work has really improved," she said.

Botts, a mother of three, said her kids are in school when she's at work. During the summer months, Botts and her husband make special arrangements for keeping the kids.

Daigle says that before she started job-sharing, she worked full-time for three years while raising two small children.

"It's a big difference," she said, noting that she can now be really involved with her kids. She has her husband's support, plus a nanny to help take care of her children when they are out of school during the summer.

Both Botts and Daigle agree that job-sharing is a great opportunity for all working mothers, and they hope the idea will catch on. Daigle said that she's spoken to many college students who are interested in job-sharing. "There are a lot of women going into engineering, and I think it will definitely help them," she said.

Daigle added that the only drawback is that she wishes she could commit more time to both her job and her family. "I consider myself a stay-at-home mom *and* a dedicated worker," Daigle said. "I may not be able to compete for promotions, but it's worth it."

Botts said, "It's a great opportunity to be a professional and a stay-at-home mom."

According to Daigle, job-sharing has worked for her for the past five years, and her supervisors are convinced that it works.

Steve Patorno, Chief of Dredging Function, said, "Someone is always there to do what needs to be done, and they also back each other up."

"Job-sharing is a great idea, and I think there's room for more of it," said Don Clement, Chief of the Technical Support Branch.

"I think you can get more out of two than one," Daigle claims. "It's a win-win situation."

Transplants

Continued from previous page

friends, and co-workers, and the dedication of the medical community.

"I survived because of all the support and prayers from many, and support from God, especially when I went through a severe rejection," Toutant said. "It's impossible for me to adequately express the gratitude I feel."

Stewart Ballard, 34, has been a computer specialist in Louisville District for more than three years. He also received great support from the district and his family. Ballard had a kidney transplant last June, and "got cards from people in the field offices I didn't know," he said. "It made me feel good."

> *"I know I have a second chance."*

Kidney failure. Ballard's experience in discovering his illness and receiving a transplant was different from Toutant's. "It began last summer (1999)," he said. " I was having a lot of headaches. When I went to the clinic here in the building, they took my blood pressure. It was very high and Carolyn, the nurse, wouldn't let me go back to the office."

Someone took him to the hospital where tests discovered that his kidneys were failing. The doctor who examined him said he was days away from a stroke.Ballard was lucky; he didn't have to go on dialysis. But treatment still wasn't easy.

"In the beginning, when they hoped to save my kidneys, I took a chemotherapy pill for three-and-a-half months that made me incredibly sick," he said. He gained 20 pounds, and had no energy. "By the time I drove an hour to work, worked nine hours and drove home, I was too tired to shop. I did a lot of fast food. It took me all night to recover from the day. I had no energy left."

He carpooled in December and January. "I was afraid I wouldn't be able to drive home," Ballard said. "I finally was so weak, I couldn't do much, so I moved in with my parents."

Although Ballard was on the list for a kidney transplant, many of his father's 13 brothers and sisters tested to donate. His Aunt Gail was the best match. The donor's and recipient's DNA and blood have to mix well and have an antigen match. "The perfect match is five, which happens with twins," said Ballard. "For Gail, it was three. And they'll take a donor who is one."

The transplant surgery was done last June 26 in adjoining operating rooms. Gail went in at 6 a.m., Ballard at 8:30 a.m. Gail's surgery lasted three hours, and Ballard's three-and-a-half. Gail was discharged in four days, Ballard in five.

"The first four weeks at my parents' home, I slept in a Lazy Boy recliner," said Ballard. "It hurt too much to stretch out because of the incision. Laughing and coughing caused a lot of pain. I couldn't lift or bend."

Ballard still has lifting restrictions and watches his diet. He stays away from salty foods and sugar. "Because of the medication, I could become diabetic," he explained.

Ballard, like Toutant, takes pills. "At the moment I'm taking 18 pills a day," he said. "Twelve are immunosuppressents and I'll be on them for the rest of my life. Two are for high blood pressure. The other four are a combination of anti-virals and ulcer prevention medications. These last few will eventually phase out."

After the surgery, Ballard had to have his blood tested twice a week. Now it's done every other week.

The surgery has made a psychological difference to Stewart. "I know I have a second chance here," he said. "I never drank much, just social drinking. I don't even do that now. And I've tried to get my life more organized."

Peace and quiet. Ballard drew closer to his family as a result of the illness, and he continues living with his parents.

He also wanted more *silence.* Ballard has had hearing loss since he was a baby. "Over the years it's progressed to all frequencies," he said. "I depend on reading lips."

So when Ballard gets home, he removes his two hearing aids so that everything is quiet. "Even with my hearing loss, I wasn't like that before," he said.

Ballard is also thinking more about his career. "I'm trying to take charge, and learn new things," he said. "In the computer field, you have to. I've set goals for myself. I would love to study new technological developments and learn how to automate. We need that in our department because we frequently have employees come in with a new technological product he or she can't use. It makes it harder for us to learn these new products when we haven't had time to study them. I'd like to be further along with that information so we could always be available to assist others."

Ballard is also grateful for his co-workers. "They've been very helpful, and my department has been so considerate," he said. "I went a whole year not working five days a week."

And finally, both Toutant and Ballard are listed as organ donors.

(Susan Toutant also contributed to this article.)

How to be an effective mentor

Article by Patsy Pagan
Photo by Bill Peoples
Nashville District

*(**Editor's note:** Active mentoring is a mainstay of Nashville District's Leadership Development Program. Patsy Writesman Pagan is a former Nashville District employee who regularly trains district personnel in the mentoring process. Pagan is a professional speaker, and a business and political strategist.)*

What is a mentor, *really*?

A mentor is "a brain to pick, an ear to listen, and a push in the right direction," according to The Uncommon Individual Foundation, an organization devoted to mentoring research and training. It reports that mentoring is the third most powerful relationship for influencing human behavior, after marriage and the extended family.

The Uncommon Individual Foundation identifies three things people need to succeed — a dream, someone who believes in them, and determination. Why do the trades have apprenticeships and medical professions require internships? Because personal attention from experienced practitioners helps students master essential skills, attitudes, and knowledge.

How the mentor benefits

Many people would like to be mentored, but those willing *to mentor* are harder to find. What are the benefits of *being* a mentor?

One advantage of mentoring is the sense of significance. People often wonder if what they're doing makes a difference, or if their efforts are just dumped into a black hole. However, in a mentoring relationship, they're usually dealing with people hungry to grow, eager to learn, and there is a more visible return on their investment.

A second benefit is personal growth. As a mentor discusses character issues with a mentoree, both are forced to look at their own character issues. You can't look at someone else's life without evaluating your own. People look to you for answers, and it holds you to a different level of accountability.

In the beginning, what does a mentor do? At first, the tasks are:

Set the tone. Once contact is made between mentor and mentoree, it is up to the mentor to create an environment where trust blossoms.

Clarify expectations. A safe place for this kind of learning requires three things — openness, hospitality, and boundaries.

Mentors do not want mentorees to expect too much or too little. Both problems can be avoided if expectations are discussed openly. Everything from "Is there homework?" to "Who pays for coffee?" should be agreed on ahead of time so there will be mutual understanding. Unrealistic or unexplored expectations can come back to haunt you later.

Patsy Pagan teaches a class in mentoring at Nashville District.

Then agree on meeting length, frequency, time, place, purpose, and level of accountability. A mentoree may expect empathy and a shoulder to cry on whenever they feel the need. That may not be your best contribution as a mentor. Or the mentor may expect something the mentoree is unwilling or unable to give. In the beginning, both need to say, "This is what I can give; this is my experience range. My life is like a box — there's lots of stuff outside this box, but you're welcome to whatever's inside."

Sharpening your mentoring skills

Once the relationship is established, the mentor does several things.

Maintain trust. After trust is established, it must be maintained. This means being honest, open, and transparent. In addition, mentors should keep to the point, follow through with commitments, and be available and flexible.

It also means appropriate confidentiality, that is, private information *stays* private. It may take months for mentorees to open up, but it takes only a minute to shut them up with inappropriate sharing.

At the outset, mentors and mentorees should discuss the kinds of information that would be appropriate to share with anyone, with other mentors, and with each other only.

Trust grows out of humility. When a person is willing to hear someone out, that engenders trust. So attentive listening is the key.

In addition, mentors learn as well as teach. Mentoring relationships are not one-way, hierarchical relationships. While it's true that one has more experience than the other does, the life sharing goes both ways. Thus, an additional responsibility of a mentor is to accept the mentoree's influence. This, too, builds trust.

Have an agenda. At least at first, the mentor plans and controls the mentoring meetings. He or she establishes the length, frequency, time, purpose, and level of accountability. However, be flexible enough to recognize teachable times, and to debrief after positive and negative events. As the relationship develops, the mentoree will soon have soon input into what is discussed and when.

Offer your network. Much of your effectiveness is not *what* you know but *who* you know. If the mentoree asks "Who knows something about this?" and you don't, then your assignment is to find out "Who *does* know something about that?"

Offer perspective. By virtue of their extra years, mentors have something mentorees do not — perspective. Mentors help their mentorees stay focused on why they do their job and who they do it for.

Ask the right questions. A mentor is not the answer person, but rather one who gets the mentoree to do helpful self-reflection. The questions might include:

- Where is your character being tested?
- What are your hopes and dreams for your future career?
- How is your relationship/communication style impacting your career?
- As you assess your growth, where do you see areas you need to work on? What deficiencies do you feel you have?
- What are some new things you could try?
- What talents, strengths, and abilities do you feel you have?
- Have you had any setbacks in your career? Why?
- What are your long-term personal goals?
- What are some new things you can try?
- What is the toughest problem you have faced and how did you handle it?
- How can I help you?

Correction. Mentors are like mirrors that help mentorees see what's preventing them from being all they can be. A good mentor doesn't attack character; he or she just holds up the mirror and says, 'Do you see this?'

Accountability. If the mentor has built a relationship of trust and safety, the mentoree is more inclined to accept correction. They will think, "My mentor cares about me, so I'll listen to what he is saying."

However, in a mentoring relationship, we have an even greater platform for accountability. If the mentoree's actions or work habits are inconsistent with their stated goals and commitment, the mentor needs to mention it.

The idea behind correction and accountability is to "make a clean wound." A clean wound is direct, not a subtle dig or sarcasm. Those are jagged wounds. And a clean wound is one that the mentor is willing to help the mentoree repair and heal. Clean wounds heal, jagged wounds don't.

No short cut

In a culture that presses for instant results by following a few key principles, the mentoring process can seem slow. But there is no short cut for equipping people to become all they have the potential to become.

The slow pace of mentoring is offset by its universal suitability for people of all ages, all races, all nationalities, and for all of life. No one ever outgrows the need for increased character and competency. We all need a brain to pick, an ear to listen, and a push in the right direction.

Around the Corps

The new survey boat Tiburon motors across San Francisco Bay with the Golden Gate Bridge in the background. (Photo courtesy of San Franscisco District)

New survey vessel

A new addition to the Sausalito waterfront is helping San Francisco District keep the Bay Area federal channels safe for navigation. The *Tiburon*, a 23-foot Commander Class deep-V-hull boat is fast and reliable but, most importantly, it provides a state-of-the-art survey platform to support the district's critical hydrographic survey mission.

Built by SeaArk Marine of Monticello, Ark., the $140,000 vessel was specially modified and outfitted to meet the district's survey needs. With its sister survey vessel the *Wildcat*, the *Tiburon* will make gathering sounding data to determine dredging needs quicker and easier.

The six-member field survey crew logs more than 4,000 nautical miles each year gathering data to identify dredging needs for safe navigation.

The *Tiburon* was delivered in April. Specialized equipment includes two VHF radios and antennas, radar, and a lighted compass.

The on-board survey system includes a Trimble DGPS receiver with a Pentium III laptop computer running the latest version of the Hypack software survey program. This software incorporates signals from satellites and the Coast Guard D-Beacon system, and calculates the location of the vessel within a meter.

Bottom profiles are computed from an Odom fathometer, measured within a tenth of a foot and tide corrected. Other equipment includes an Odom dual frequency fathometer which can measure "fluff" or floating mud, an Odom Digitbar to calibrate for water density, and a heave, pitch, and roll motion sensor to compensate for waves.

Department of Commerce award

Theresa Armijo, Chief of Contracting Division in Albuquerque District, has been awarded the Regional Director's Award for Minority Enterprise Development Week 2000 by the U.S. Department of Commerce. She received the award Sept. 21 at an event commemorating the national observance.

Through Armijo's efforts, the district has become a federal leader in the 8(a) procurement program. Last year, 86 percent of the district's contracts were awarded to small businesses; 57 percent were awarded to small and disadvantaged businesses, and 17 percent were awarded to women-owned businesses.

Safety awards

The Corps has presented two major safety awards to its partners.

On Oct. 12, Japan Engineer District Commander Col. Thomas Charlson presented the Corps' Host Nation Award for Safe Performance to Hitoshi Tsujimoto, President of the Sumitomo Kensetsu Company, for his firm's outstanding safety record while building the Kadena Medical/Dental Clinic at Kadena Air Base in Okinawa. Sumitomo Kensetsu Company had no recordable accidents during the more than 900,000 man-hours it took to build the 227,000-square foot facility.

One Sept. 15, Brig. Gen. Randal Castro, the Pacific Ocean Division commander, presented Jacobs Engineering Group with the Chief of Engineers Award for Safe Performance in Alaska District's new atrium. Jacobs managed the four-year Total Environmental Restoration Contract program at remote sites with only one lost time injury in 216,000 hours worked.

Gerard Medal

Dr. Mark Hopkins, a research physical scientist, and Dr. Steven Daly, a research hydraulic engineer, both with the Cold Regions Research and Engineering Laboratory, have received the Gerard Medal from the Canadian Geophysical Union-Hydrology Section (CGU-HS).

The Gerard Medal is given by the CGU-HS Committee on River Ice Processes and the Environment to the best paper delivered to each of the six biennial workshops sponsored by the committee. Hopkins and Daly will receive the award at the CGU-HS Committee's workshop in Ottawa in May 2001 for their joint paper "Discrete Element Modeling of River Ice at Navigation Structures."

New guide and summary

A summary and guide to technology developed under the Repair, Evaluation, Maintenance, and Rehabilitation (REMR) research program is available on the Engineering Research and Development Command's website. The REMR Program Overview and Guide, online at www.wes.army.mil/REMR/reports.html, helps users identify items in the program's 184 technical reports, 173 technical notes, 51 information bulletins, and nine video reports.

The REMR program identified and developed technology to maintain and extend the life of Corps civil works structures. Research covered concrete and steel structures, geotechnical, hydraulics, coastal, electrical and mechanical, environmental, and operations management.

Users of technology developed by the REMR Program report saving millions. Total savings attributed to use of REMR technology are expected to continue to accumulate for many years. Elements of research begun under REMR continue as part of the Corps' High-Performance Materials and Systems Research Program.

Jet engine workshop

The Air Combat Command (ACC) has honored Albuquerque District's in-house design of the German Air Force's Jet Engine Workshop at Holloman Air Force Base, N.M. The $3 million project won a Citation Award in the Concept Design category for the ACC's 2001 Design Awards program, and will compete next in the Air Force's 2001 design competition. The competition will take place next summer.

The 22,164-square-foot facility was part of a $50 million project package for the GAF's second phase of its beddown program for Tornado fighter planes at Holloman. The package includes a parking apron, aircraft maintenance hangar, and parking shelters. A crucial design objective was to capture the abundant natural light of southern New Mexico. A large number of clerestory windows accomplishes this objective.

The engine bay dock and fuel cell workshop make up about half the floor area. Support functions are arranged to compliment the building's primary function, maintaining and rebuilding jet engines. The facility also contains a storage area for partially disassembled engines, a break room, and an isolated technical cleaning room. When the facility is fully occupied, it will house about 45 German Air Force employees.

An artist's drawing shows how the Jet Engine Workshop will look when complete. (Graphic courtesy of Albuquerque District)

225 Years

Bikes used in flood-fight

(This is another in a continuing series of true stories from the history of the U.S. Army Corps of Engineers to celebrate our 225th year. This article is from "The History of the U.S. Army Corps of Engineers," EP 870-1-45.)

The Fourth Engineer District at New Orleans received word in early 1897 that a major flood was southbound on the Mississippi River. Maj. George Derby, the district engineer, and his civilian assistant, W.J. Hardee, prepared to defend the levees along more than 450 miles of river at the Fourth District.

Following standard procedure of 1897, they stationed barges and quarterboats loaded with tools, sandbags, and lumber at roughly 15-mile intervals along the rivers, with towboats assigned to each 60-mile section.

But during previous flood emergencies, Fourth District personnel had encountered great difficulty maintaining regular patrols of the levee system and coordinating their work with five other agencies — individual planters, railroads, parish governments, levee districts, and state government.

Backwater and washouts also closed roads and railroads, motorized vehicles had not been invented in the 1890s, and the towboats moved too slowly and usually too far from the shore for proper inspection.

To improve coordination and inspection, Hardee equipped field personnel with bicycles. Although bicycles had been around for about 50 years, the lightweight, chain-driven, balloon-tired bicycles that are familiar today were still exotic high-tech at that time.

During the following flood-fight, the inspectors kept constantly on the move atop the levee crowns with their new transportation equipment. Hardee himself personally covered as much as 30 miles of levee a day on his bicycle, including stops for observation, and presumably to catch his breath.

Corps responds to herbicide spill

Article and Photos
By Jim Edwards
Portland District

Corps cranes lifted heavy equipment into the almost inaccessible streambed during the first day of the disaster, enabling the containment and recovery work to begin almost immediately after the accident.

Aug. 22 started as just another uneventful Tuesday. The Columbia River was docile, snaking its way through the upper end of the Columbia River Gorge. The weather was calm, maybe a little warm. Fish runs were in full swing, and most people's attention was focused on fires in other parts of Washington and Oregon.

But the serenity was shattered when an 18-wheeler suddenly slammed into a guardrail along Interstate 84. It then hit the center divider and swung back into the wall of a bridge over a small tributary to the Columbia River, a few yards from the Seufert Visitor's Center at The Dalles Dam. One part of the trailer catapulted over the wall and down onto the steep bank of Fifteenmile Creek, while the truck and other section of the trailer caught fire and burned.

Toxic spill. Within seconds, thousands of gallons of highly concentrated herbicide began pouring into the waterway.

"According to investigators, there were 828 containers with some 4,100 gallons of chemical on the truck," said Jerry Balcom, an environmental protection specialist at The Dalles Dam. "After the accident, 425 containers were accounted for. That left about 2,600 gallons of product unaccounted for."

Most of that was headed down the creek toward the Columbia River, just downstream of the dam. "The stuff was visible," Balcom said. "If you take a cup of coffee and slowly pour cream into it without stirring, that's what you'd see."

The fire spread to the embankment and the separated trailer, melting the remaining containers and releasing more of the poison.

The driver, his wife, and one of their two dogs got out of the wreck safely, but responders to the scene were held up by a lack of information on the cargo.

The first warning for many nearby residents that there might be a serious problem was the strong chemical odor that drifted toward The Dalles as dawn broke over the brown hills.

"I live more than three miles away," said Monica McWilliams, a safety specialist at The Dalles. "On the morning of the accident I could smell it then. When I was onsite the second day I could still smell the herbicide in the air."

Instant response. The location and timing of the accident thrust the U.S. Army Corps of Engineers into a pivotal role in the emergency. Corps response teams from The Dalles Dam limited the chemical's spread into the Columbia, preventing a major disaster to fish runs. Within 90 minutes of discovering the toxic spill, Corps workers installed booms designed for oil recovery across the mouth of the creek, containing most of the herbicide that spilled into the water.

"Our cranes were relocated to the site the first day," McWilliams said. They began hoisting heavy equipment from the high cliffs into the almost inaccessible creek bed below, allowing recovery efforts to begin almost immediately. "Without them, this job would have been much, much harder."

Corps floodlights were pressed into service to allow the assessment and recovery efforts to continue around the clock, and Corps electrical crews ran cables to provide power to the cleanup teams and temporary offices.

Corps engineers were onsite quickly, and saw that as long as fresh water flowed down the creek, the herbicide would continue to seep into the Columbia River. Jerry Christensen, Chief of the Civil and Environmental Design Section at Portland District, assisted the cleanup contractor in designing a solution, which included a diversion dam upstream, made possible by a supply of Corps sandbags.

A second sandbag dam was built near the creek's entry into the river. Pumps were then used to divert the stream's flow from upstream, around the contaminated area, and back into the river.

During the effort, Corps workers recognized the likelihood that Native American cultural artifacts are present at the site. Corps archaeologists arrived on the scene to coordinate protection and preservation activities, including roping off large sections of the area to exclude all traffic.

"This site was heavily used in history," said McWilliams. "There's the foundation of a fish wheel, a bunkhouse, and the site was used extensively by Native Americans. There are a lot to protect."

Everyone involved quickly realized this was a large-scale disaster requiring a large-scale response. A unified command formed to coordinate activities between all the state and federal agencies and their civilian contractors, Native American tribal leaders, and the company hired by the shipping company to perform the cleanup.

The Corps closed Seufert Park and the Visitor's Center and made it available as the command's headquarters for the duration. The area around the center became a major staging area for the huge purification tanks and heavy equipment used at the site.

Large-scale. While dozens of Corps employees assisted workers at the site, members of Portland Districts' Regulatory Branch were hard at work making sure the necessary permissions and permits would be processed and available to keep the cleanup work on track.

"About 30 to 45 Corps' people have been involved in the cleanup off and on," said McWilliams. "The Corps has supplied more than 12,000 sandbags, and we've put in a lot of hours. We'll continue coordination efforts for portable structures to keep the level of the emergency dike above the rising water. We have one on its way from Texas now."

In the first few days of the cleanup, more than 1,200 fish were found dead. The fish kill was limited to areas of Fifteenmile Creek that were first separated from the rest of the tributary. On the other side of the Corps' oil booms, and in the Columbia River itself, there have been no reported fish losses. Thanks to fast, effective action by a number of Corps workers and superb inter-agency cooperation, the fish runs that are so much a part of the Columbia basin's heritage are safe.

Corps workers at The Dalles Dam installed oil recovery booms within minutes after the herbicide spill in Fifteenmile Creek. The booms reduced the movement of the herbicide into the Columbia River to a trickle and protected the fish runs underway at the time.

Returning to normal. Efforts to restore the area in and around Fifteenmile Creek continue. The Corps' main efforts have been to help the joint team overcome obstacles to saving Columbia River fish runs from further damage. Corps employees logged some 580 regular hours and 155 overtime hours assisting the unified team.

The cost of the clean-up project will be borne by the trucking company.

The Corps' project at The Dalles reopened Seufert Park Visitor Center on Oct. 2. While work is expected to continue for some time yet, most of the heavy equipment is gone and things are beginning to return to normal for visitors to the popular Corps site along the Columbia River.