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Engineer Update

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These houses in Puerto Rico were damaged by Hurricane Georges. All the temporary roofs were built with the help of the Corps of Engineers. (Photo courtesy of Georges Emergency Response Office)

'Three battles, one war'

New emergency plan passes test

By Barry Vorse
Jacksonville District

Electricity, water, ice, a roof over your head, and surroundings not cluttered with debris are taken for granted by most of us. On Sept. 21, Hurricane Georges hit Puerto Rico with winds of more than 100 miles per hour and rainfall of more than 20 inches. Damage was estimated at more than $2 billion.

"Our efforts to help Puerto Rico recover from the effects of Hurricane Georges amounted to three battles and one war," said Col. Dean Kershaw, Deputy Division Engineer at South Atlantic Division. "We had the close battle, the items at hand like the rubble and the immediate things that needed to be taken care of. We also had the deep battle, what happens next, specifically how to get 'out of Dodge.' By that I mean the strategy to disengage that needs to be decided up front. And thirdly, there was the information war. We had to get information to Headquarters."

Kershaw said the third battle was the biggest challenge.

"The Internet concept initiated by Jacksonville District was a breakthrough," Kershaw told a December gathering of Corps personnel in Jacksonville. This meeting, the Hurricane Georges Hot-Wash After Action Review, synthesized 490 pages of lessons learned from the massive hurricane recovery effort.

In past disasters, information was collected from the field and placed in a Situation Report (SITREP) in Jacksonville, forwarded to the South Atlantic Division (SAD), which compiled a Division SITREP and forwarded it to Headquarters.

During the Georges recovery, as new information became available, mission managers and support staff collected, analyzed, and posted it on the Internet instantly, eliminating the time lag from Jacksonville District to SAD to Headquarters.

"Hurricane Bonnie (an earlier hurricane) was a non-event compared to Georges," Kershaw said. "A large disaster will eat your lunch!"

The island was devastated, leaving about 60,000 homes without roofs, the entire island without power, debris everywhere -- essentially a country in shambles.

The Federal Emergency Management Agency (FEMA) went to work immediately. As it has done after past storms, FEMA gave the Corps several missions -- providing ice, water, emergency power, temporary roofing, debris removal, and technical assistance.

Initially, the responsibilities fell to Jacksonville District. After district emergency managers defined the scope of the emergency, they called other districts into action. The recovery, which will continue into the New Year, have already involved more than 1,000 Corps personnel from across the country, even from Hawaii and Alaska.

"It's been something to behold," said Richard Bonner, Deputy District Engineer for Project Management. "When I was down there, I flew over a home getting a temporary roof, and the entire family was out on the lawn and waved thank you to us.

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Safety record continues to improve

By Bernard Tate
Headquarters

The safety record of the U.S. Army Corps of Engineers continued its positive climb in fiscal year 1998. In FY98, there were no accidental federal employee fatalities during normal duty hours, and only 470 lost-time injuries and illnesses, compared to one fatality and 527 lost-time claims in FY97. There were two contractor fatalities and 217 contractor injuries, compared to 227 injuries and eight fatalities in FY97.

Accident rates were a historic low in FY97. The lost-time accident rate (or number of lost-time incidents per 100 workers) for federal employees fell from 1.32 in FY97 to 1.25 in FY98, and the lost workday accident rate for contractors fell three percent from 0.61 to 0.59.

"This is the first year in our history that no government employee died as a result of an on-the-job accident during normal business hours," said Connie DeWitt, Chief of the Corps' Safety and Occupational Health Office.

Corps safety experts attribute the improvement to command leadership, a team approach, and management support.

Horizontal

"We're no longer the stove-pipe we once were; we've taken a total team approach," said Vickie Siebert, Safety and Occupational Health Manager at Headquarters. "People used to say, 'Well, how did the Safety Office do this year?' No longer. We've come to realize, as a MACOM, that safety needs to be more horizontal than vertical, and we're pulling together the strengths of other directorates and staff offices to make it happen. In the field, at district level, it's also more horizontal than vertical, and the same at division-level.

"We also have the support of management at each level," Siebert continued. "Commanders are now working more as a team on how to best manage their district, their division, or headquarters. As the Corps' Safety Officer, General Ballard's leadership in safety and health has definitely helped the program. The Chief's Strategic Vision has given us direction and guidance resulting in a safer environment for our employees, contractors, and members of the public visiting the Corps' recreation projects.

Supports Army

"Another area we've improved is supporting the Army as a whole," Siebert said. "Keep in mind, most Corps safety offices have only two, maybe three people. We received directions from DA to support Bosnia, and numerous Corps safety and health people have gone there for six months to a

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Command's first chaplain arrives

By Chaplain (Lt. Col.) Harold T. Carlson
Headquarters

Chaplains are not new to the Army. They are, however, very new to the U.S. Army Corps of Engineers. I am the first, as far as I know. Chaplains are usually assigned to troop units or commands. To have a chaplain in a mostly civilian organization like the Corps is unusual. My being with you represents a significant initiative by Lt. Gen. Joe Ballard, the Chief of Engineers; Maj. Gen. Albert Genetti Jr., the Deputy Chief of Engineers; Dr. Susan Duncan, Director of Human Resources, and other key members in our organization. It also required an effort by the Chief of Army Chaplains, Maj. Gen. Don Shea, and members of his staff.

Lt. Col. Harold Carlson is the first chaplain assigned to the Corps in its history. (U.S. Army Photo)

Chaplains have been a part of the Army since its beginning. George Washington called for the first official chaplain on July 29, 1775. Since that time, men and women of the clergy have donned uniforms and become soldiers, staff officers, and ministers.

We chaplains are soldiers first and must meet stringent standards of height, weight, and physical fitness. Although chaplains are strictly noncombatants, a wide range of military training is open to us, including Jungle School, Jump School, Jumpmaster School, Combat Lifesaving, -- any training, that does not violate our noncombat status.

Beyond the military requirements, each of us must also fulfill the religious requirements of his or her denomination and endorser (an organization that interfaces with the Chief of Chaplains Office). A chaplain requires a Master's of Divinity degree from a seminary or similar institution of higher learning with three or four years of schooling beyond a college bachelor's degree, and two or more years of service as a civilian clergyman.

Then, subject to available slots, a prospective chaplain must interview with a chaplain of the rank of colonel and be recommended for active duty. If accepted, he or she must attend the eight-week Chaplain Officer Basic Course at Fort Jackson, S.C. Upon completion, the chaplain is ready for his or her first active duty assignment.

Now, who am I? I am Chaplain (Lt. Col.) Harold T. Carlson, but I prefer to be called Tim. I am married to Judy Raye Nelson of St. Paul, Minn., and we have six children and four grandchildren. I came to the Army Chaplaincy under the umbrella of the National Association of Evangelicals.

I did my Basic Combat Training in 1971 at Fort Leonard Wood, Mo. I went through the Chaplain Officer Basic Course (then at Fort Monmouth, N.J.) in 1980. My first assignment as a chaplain was with the 1st Battalion, 67th Air Defense Artillery at Fort Lewis, Wash., from 1980-1983. Since then, I have served with numerous units. Most recently, I served as Deputy Post Chaplain at Fort Leonard Wood, Mo.

I plan to be an active part of the Corps, both in Headquarters and in the field. We represent a diverse lot in the Corps, and persons of all faiths are important. Their beliefs require collective respect and corporate care.

In Headquarters, I plan to initiate a weekly prayer luncheon. This will be a time for a bag lunch, a brief devotional and prayer. This practice has a long history stemming from our first president.

I plan to establish a meditation and prayer room that is open to persons of all faiths. I will also offer short-term counseling and referral for team members, as necessary.

But I don't intend to just sit in the Headquarters. I see part of my mission as keeping the command apprised of matters of religion and morale and seeking to further the spirit of goodwill and camaraderie that already exists in this great organization. I plan to serve as a liaison linking members of the Corps serving at disaster sites with helping agencies that can offer spiritual and emotional support to our people. They may need time to debrief from critical incidents, time to process the pain and distress of dealing with victims, or time to reflect, to tell their story, or time to talk to God.

This linkage will require your help. I will need all of you to keep me informed of the condition of our people and their support needs.

The world in which we live and work day to day is very large, and can often seem overwhelming. It is crucial to remember, "With God all things are possible!" Working together, this global mission can make a positive difference.

I welcome your input and dialogue. You can reach me by e-mail, or you can call me at (202) 761-0772. I believe open communication will help to develop the new chaplain's post into a significant position, and that it will help to make our great organization even better, stronger, and more people-affirming.

Powerhouse move planned in Alaska

By Tamara Barry
North Pacific Regional Office

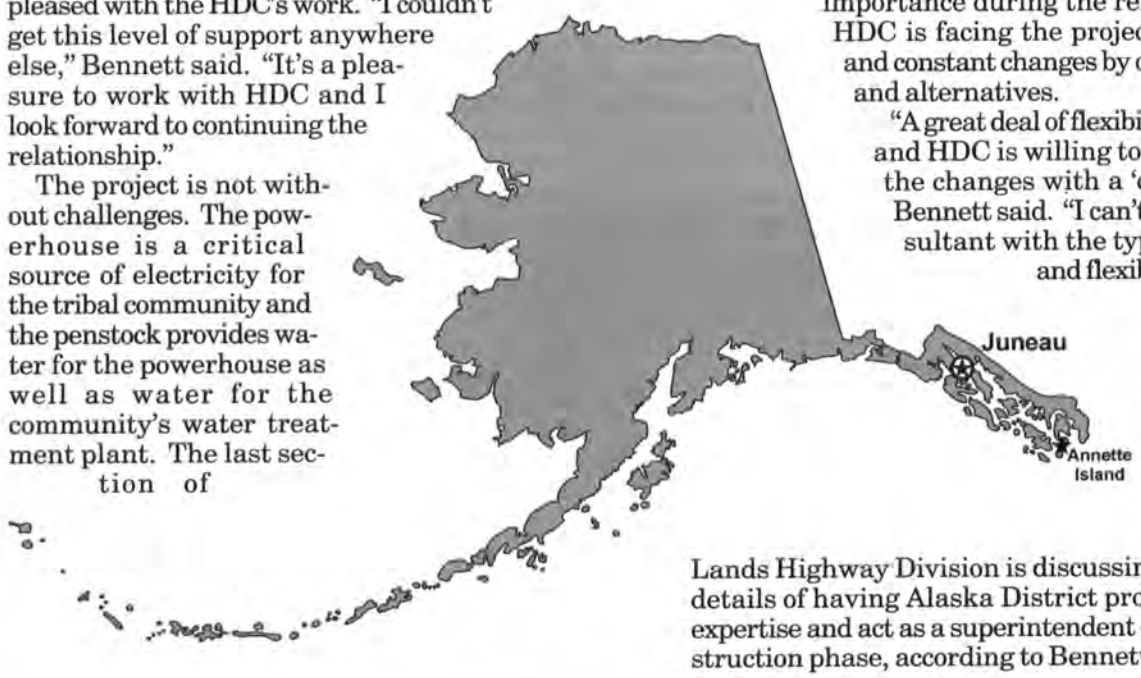
When the Federal Highway Administration (FHWA) faced moving a powerhouse that stood in the way of a new 24 kilometer (14.88 mile) road in a remote part of southeastern Alaska, it launched a search for the best hydroelectric design expertise in the nation. That led them to the Hydroelectric Design Center (HDC) of the U.S. Army Corps of Engineers. Fahmi Ismail, a former HDC employee, recommended the HDC. Ismail now works for the FHWA as a structural engineer.

The new two-lane road being built through Annette Island's densely forested, mountainous terrain will link the isolated tribal community of Metlakatla to a new ferry terminal site on the north end of the island. Besides relocating the generation equipment from the powerhouse, HDC will also design and build a new powerhouse and relocate 540 meters (590 yards) of penstock (pipe) that provides water to the powerhouse. The Corp's work is estimated at between $2 and 3 million and will be done during several summers due to the island's short construction season.

The new powerhouse superstructure will be 14 by 16 meters (15.3 by 17.4 yards) and will contain a relocated one-megawatt generator and space for a future three-megawatt unit. HDC will build the new foundations and superstructure, install the turbine imbedded parts, switch gear, and lighting, and relocate the moveable turbine generator parts.

Tom Bennett, design engineer with the FHWA's Western Federal Lands Highway Division, is pleased with the HDC's work. "I couldn't get this level of support anywhere else," Bennett said. "It's a pleasure to work with HDC and I look forward to continuing the relationship."

The project is not without challenges. The powerhouse is a critical source of electricity for the tribal community and the penstock provides water for the powerhouse as well as water for the community's water treatment plant. The last section of penstock will cover steep terrain, and the soil at the powerhouse site is sandy and rocky, limiting the weight it will bear.



So minimizing interruptions to the water supply and electrical generation will be of primary importance during the relocation work. HDC is facing the project's challenges and constant changes by offering options and alternatives.

"A great deal of flexibility is required, and HDC is willing to accommodate the changes with a 'can do' spirit," Bennett said. "I can't think of a consultant with the type of expertise and flexibility that HDC offers."

The Corps may provide even more support for the project in the future. The Western Federal Lands Highway Division is discussing preliminary details of having Alaska District provide technical expertise and act as a superintendent during the construction phase, according to Bennett.

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Doug Walsh, a safety specialist from Kansas City District, presents Safety and Occupational Health pins to children in Puerto Rico. In the background are clean-up operations which the Corps safety team taught local children to avoid. (Photo courtesy of Georges Emergency Response Office)

Corps keeps kids safe in Puerto Rico

By Elsa Jimenez
Jacksonville District

The children were placing themselves in danger.

They were getting in the way of roof repairs and playing around heavy equipment used to load and haul debris during the clean-up after Hurricane Georges in Puerto Rico.

So safety officials with the U.S. Army Corps of Engineers came up with an ingenious idea to keep the children out of harm's way. They *deputized* them and made them part of the Corps' safety team.

When a youngster is deputized, he or she receives a Safety and Occupational Health pin, which the safety officer fastens to the child's shirt.

"We wanted to give the kids an incentive to stay away from the project site," said Flo Cleyman, Safety Officer of the Georges Emergency Recovery Operation, who came up with the idea.

"The children wanted to help, so they would get in the middle of the work," Cleyman continued. "By deputizing them, we made them responsible for keeping their area clear. They are told not to go to the project site and to tell others not to go. This way they had a job, too, one they took pride in. They have kept both adults and other children safe and away from the equipment."

Safety

Continued from page one

year. We have two people still in support of the Hungary/Bosnia mission, and we've had a total of five volunteers over there. They've done quite well, working right along with the military.

"We've also had a request to support Puerto Rico during Hurricane Georges, and right now we have nine safety and health people there," Siebert continued. "This week we're organizing safety and health support for Honduras after Hurricane Mitch. Remember that the Corps' safety career program has only about 100 members, but our 'people commitment' means that we not only take care of our own, we also support DA when called upon."

Improvement needed

However, the Corps' safety record was not spotless in FY97, and Siebert says there are still areas that need improvement and total support. "We did have one employee killed in a car accident while on TDY after normal duty hours," she said. "We also had a tree-felling accident resulting in paralysis. In the contractor area, we recorded only two fatalities, also a new record. Three was the fewest contractor fatalities experienced in the Corps before this year.

"We emphasize the Activity Hazard Analysis, but we need to not only emphasize the written part of the plan, but also the verbal," said Siebert. "The tree-felling accident showed the need for discussing the hazards involved in work processes, and planning to minimize and manage these risks. Employees need to talk to each other about how to perform a certain task with minimal risk to life and property before they go do it. So more communication, more Activity Hazard Analysis discussion and planning before the operation, is an area we are emphasizing this year.

"Another area of concern is driving safety, both on and off the job," said Siebert. "When people go home, they usually drive a car. Well, if you have a serious accident going to or from work, even though it's not part of your eight hours of accountability, you're not going to be able to accomplish your job."

Water safety

A third area that Siebert wants to focus on is water-related public fatalities. "That's the one place where our record didn't improve last year," she said. In FY98, there were 212 water-related fatalities among people visiting Corps projects for recreation, compared to 156 in FY97, and more than our average of 176 since 1990.

"One area that really needs to be stressed is leaving children unattended at a recreation site," said Siebert. "The parents get distracted with what they're doing, the little one ventures out in the water, and the next thing the parents know, the child has drowned. The Headquarters Safety and Occupational Health Office and civil works Natural Resources Office has requested assistance from the Corps' Water Safety Committee to help us. John Punkiewicz in the Natural Resources Office of Rock Island District is compiling and analyzing recreational fatality information to help us determine where and what areas we need to emphasize to reduce recreational water fatalities."

Three principles

"Our USACE Accident Prevention Plan for FY99 takes a common-sense approach and outlines three principles for safety success," said Siebert. "First, commanders are the safety officers and set the cultural tone for safety. Second, communicate clear lines of responsibility and accountability for safety and health. Finally, use a team approach to conduct risk-based hazard analysis before performing the work."

Puerto Rico

Continued from page one

Things like that touch your heart and make you realize that all the hard work and long hours are well worth the effort."

Numbers boggle the mind when it comes to supplies and services provided to Puerto Rico.

Ice. More than 18.5 million pounds of ice were shipped to the island.

Water. More than 7.2 million gallons of water were delivered.

Roofing. More than 65,000 homes got temporary roofing.

Debris removal. The Corps is managing removal of 2.25 million cubic yards of debris.

Emergency power. More than 250 generators were brought in from as far away as Ireland to provide electricity until local power plants were reestablished.

"We had a lot of people putting in difficult hours and performing yeoman's work," said Col. Joe Miller, Jacksonville District Engineer.

Under the Corps' new Response 2000 (R2K) plan, Wilmington District got the water mission, and Charleston District got the ice mission. The 249th Engineer Battalion (Prime Power) handled power. Teams of four to nine individuals responded from Pittsburgh, Chicago, Norfolk, Kansas City, Albuquerque, and other districts.

If this were not enough, Hurricane Georges continued past Puerto Rico and raked the Florida Keys, leaving more damage and destruction and an even larger demand for Corps manpower. Yet the Corps again responded without hesitation and carried out its mission.

According to John Ashley, Chief of the Readiness Branch in Jacksonville District, this response was the first real test of R2K. He said the plan passed with flying colors, thanks to a concerted, determined Corps-wide effort.

This is just a small part of the 2.25 million cubic yards of debris that the Corps has cleaned up after Hurricane Georges in Puerto Rico. (Photo courtesy of Georges Emergency Response Office)

Virtual team scrubs atomic waste

By Arleen K. Kreusch and Mary Grace Quinn
Buffalo District

Contractors excavate radioactive soil at this site near Tonawanda, N.Y. Though the amount of soil excavated -- more than 32,000 yards -- totaled more than expected, the project came in $1 million under the estimate. (Photo courtesy of Buffalo District.)

Buffalo District met some of its most compelling challenges in recent years when Congress assigned the Formerly Utilized Sites Remedial Action Program (FUSRAP) to the U.S. Army Corps of Engineers on Oct. 13, 1997. Creating a virtual team helped the district rise to the challenge.

The Corps received administration and execution of FUSRAP under the Energy and Water Appropriations Act of 1998. More than a third of the 21 sites nationwide were in New York and Ohio, in the geographic boundaries of Buffalo District. At that time, work was proceeding at only one site, the Linde Site in Tonawanda, N.Y.

The FUSRAP sites were part of the nation's early atomic energy program, so the district needed to quickly learn how to clean up low-level radioactive waste. The sites contained low levels of uranium, thorium, radium, and their decay products. One Ohio site presented unique challenges from additional contamination with beryllium.

They needed expertise in a vast array of disciplines, including project management, contracting, engineering, public affairs, legal, safety, hydrogeology, construction management, real estate, quality assurance, radiation, and health physics. And they needed the expertise without delay.

To satisfy this need, team members were selected from across the country and without regard to district or division boundaries. Members came from Baltimore, Louisville, Nashville, Detroit, Omaha, and Kansas City districts; the Great Lakes and Ohio River Division; the Hazardous Toxic and Radioactive Waste Center of Expertise in Omaha District; and from Corps Headquarters.

A "virtual team" is a geographically dispersed group who do almost all their work, coordination, and meetings in "cyberspace" -- in other words, by phone, video teleconferencing, e-mail, fax, and other electronic communication. This widely-scattered virtual team had to keep the eight FUSRAP sites in Buffalo District ahead of schedule and under budget.

Team members persevered through a year of long hours, many times working evenings and during weekends. They participated in specialized training and workshops to increase their knowledge and enhance their skills and performance.

At the end of its first year of FUSRAP management, the team led by Buffalo District has met or exceeded all goals established with the assignment of the program last October. And using a virtual team saved American taxpayers an estimated $5 million in its first year.

"The fact that Congress gave us this mission shows the Corps has the reputation for getting things done and done right," said Lt. Gen. Joe N. Ballard, Chief of Engineers, in a recent press release. "Through this program, we are progressively working at contaminated sites around the nation, cleaning them up quickly and cost effectively."

Some of the sites managed by Buffalo District's virtual team are:

Ashland 2 Site, Tonawanda, N.Y. -- Contractors excavated more than 32,000 cubic yards of low-level radioactively contaminated soil. That volume exceeded expectations, but the project was still accomplished for $1 million less than estimated. The FUSRAP virtual team's decision to send the material to an alternate disposal facility where material will be recycled, saved at least $30 per cubic yard.

"The project has met the cleanup goals without sacrificing safety."

Bliss and Laughlin Site, Buffalo, N.Y. -- After negotiating an access agreement with the owner, the district released a proposed remediation plan for public comment before the end of the fiscal year. Buffalo District will issue a Record of Decision after the public comments are reviewed. Since the facility is operational 24 hours a day, six days a week, the Corps must do the cleanup on weekends to mimimize operations disruptions.

Linde Site, Tonawanda, N.Y. -- The Corps disposed of 3,700 cubic yards of soil, demolished a 70,000 square foot building, and decontaminated and restored the facility's Research and Development Building.

Luckey Site, Luckey, Ohio -- The Corps is investigating the site's beryllium and radioactive contamination. With the collection of characterization data complete, the Corps will analyze the data, determine if additional testing is required, perform a risk assessment, and begin a feasibility study to develop potential solutions.

Niagara Falls Storage Site, Lewiston, N.Y. -- The Waste Containment Structure contains 250,000 cubic yards of low-level radioactive contaminated material. Besides maintaining and monitoring the structure, the Corps had a security fence installed. A contract has been awarded to remove the contaminated material, which accumulated at the site for several years during routine maintenance and investigative activities. Because the material includes 3,900 cubic yards of high-activity low-level material, the Corps is preparing a scope of work for the remedial investigation of this site.

Painesville Site, Painesville, Ohio -- Executing the selected remedy for the Engineering Evaluation/Cost Analysis was ahead of schedule at fiscal year end. During remediation, additional quantities of contaminated materials were found. This discovery will require further investigation and additional remediation.

The virtual team met its goal of increasing public participation. The district invited local public officials and media representatives to media events which included briefings about and tours of the Ashland 2 and Painesville sites. These resulted in positive press coverage. Additionally, the district holds formal public meetings, informal information sessions, presentations to interest groups, area businesses, and other organizations, and presentations to employees of the businesses currently occupying the sites.

"Since the Corps of Engineers became involved, the project has moved at a pace that has met the cleanup goals without sacrificing safety," said Carl Calabrese, Town of Tonawanda Supervisor. "It has been a pleasure to work with this group of professionals."

Brig. Gen. Hans A. Van Winkle, Great Lakes and Ohio River Division Commander, congratulated the FUSRAP virtual team for its execution of the FUSRAP mission in a letter to Lt. Col. Mark D. Feierstein, Buffalo District Commander. "Assuming responsibility for an entirely new program...the Buffalo District team nonetheless met or exceeded every appropriate program goal or project milestone of an extremely ambitious schedule. The individual team members demonstrated perseverance, initiative, and a commitment to duty worthy of the traditions of the U.S. Army Corps of Engineers. Collectively, the team demonstrated the viability of the corporate culture of the new U.S. Army Corps of Engineers, in which leaders can emerge in all parts of our matrix organization, and One Door to the Corps is a reality."

The Engineer Team of Choice

Park Service calls on Corps for fuel

By Gerry Arbios
Seattle District

Winding its way down through the North Cascades from Canada, the Skagit River resembles a fjord with its turquoise water rushing through steep rock corridors. The river was dammed first in 1924 with Gorge Dam and later by Diablo and Ross Dams, and the resulting lakes provide a treat to recreational boaters and hikers.

But those recreational boaters also need fuel.

The U.S. Army Corps of Engineers helped provide that fuel recently when a brand-new gray-and white fuel barge arrived at Ross Lake for the National Park Service (NPS) to use at Ross Lake Resort. The Corps awarded the design contract to Seattle's Art Anderson Associates in 1997, followed by a fabrication contract to Modutech Marine, Inc., of Tacoma.

The steel float barge, which will serve recreational boaters, Seattle City Light, and NPS, sports two gas tanks with a storage capability of 5,100 gallons and a variety of safety features. The barge replaces an old 2,500 gallon single-walled tank on wooden floats.

A couple of challenges faced the team led by Corps' project manager Owena Yang. One revolved around environmental protection. Yang and the NPS staff in Sedro Woolley, Wash., worked to ensure compliance with the Environmental Protection Agency's (EPA) regulations that call for upgrade or replacement of all regulated fuel tanks to meet new tougher standards. In addition, the barge had to comply with Coast Guard directives.

After Modutech completed construction, they faced the hurdle of transporting the 35,000 lb. barge from Tacoma to Ross Lake in one piece. The barge convoy drove north on Interstate 5 across the border to Canada and east to the tip of Ross Lake. After they floated the barge, the contractor installed 15,000 lbs. of lead ballast ingots, then pushed it down into Washington state to moor at Ross Lake Resort.

"This barge solves several long-standing problems," said Bill Paleck, superintendent of the North Cascades NPS Complex which includes Ross Lake National Recreation Area. "Fueling the boats that park rangers, maintenance workers, and researchers use around Ross Lake will now be much easier and safer, as well as faster. And there will be a much lower risk of fuel spills."

The 38-foot streamlined barge features storage tanks below the surface for 3,000 gallons of mixed gas, 1,500 gallons of unleaded gas, and 300 gallons each of diesel and two-cycle motor oil. Other safety features include a two-foot-plus leeway between the gas pumps and the edge of the barge, and multiple bumpers on all sides. The barge can be easily towed across the lake from the resort to a boat ramp to refill from a fuel truck.

The National Park Service has a new fueling station on Ross Lake in the Cascades Mountain range in Washington. The Corps' engineering challenge was to provide a way for recreational boaters to refuel without fuel leaks harming the environment. (Photo courtesy of Seattle District.)

A new fueling barge on Ross Lake will provide fuel for area boats faster and safer. (Photo courtesy of Seattle District.)

Brian Swindall (center), an employee of Modutech, which built the barge, explains how it operates to National Park Service staff, Ross Lake Resort staff, and a member of the design team from Art Anderson Assoc. (Photo courtesy of Seattle District.)

1973 disaster revisted:

EPA turns to Corps for help with bombs from a long-ago train wreck

Article by Gary Britter
Photo by Ray Hayes
Sacramento District

Gary Britter, left, a public affairs specialist, and A.R. Smith, an explosive ordnance disposal specialist, both of Sacramento District, examine a pile of recovered scrap from the 1973 explosion.

When California authorities faced cleaning up bombs left from a 24-year-old train wreck, they called in Sacramento District of the U.S. Army Corps of Engineers.

It was 7 a.m. on a Saturday in 1973 when a train pulling 103 cars arrived at the Southern Pacific switching yard in Roseville, Calif. Its cargo included 7,056 Mark 81 bombs. They were loaded on 21 Department of Defense freight cars at the U.S. Naval Ammunition Depot in Hawthorn, Nev., bound for Vietnam via Port Chicago near Pittsburgh, Calif.

Each bomb weighed 250 pounds and contained 90 pounds of explosive. The explosive, Tritinol, is made up of TNT and aluminum flakes. It's one of the most stable explosives used in military ordnance, and the bombs were not armed during shipment. That means that they did not have the two fuses necessary to explode them.

But explode they did.

A fire on one of the rail cars set them off. To this day, no one knows what caused the fire or how many bombs blew up. But after 18 hours of explosions, Army munitions teams recovered 1,200 unexploded bombs scattered around the area and collected another 300 bombs from rail cars. Aerial photographs from that time show a railroad smoldering and piled with twisted track, shattered cars, and scraps of metal from bomb casings. Much of the debris was buried in the 10-foot-deep craters left by the blast.

Fast forward to October 1997. Construction on a $130 million remodeling project at the switching yard is under way. Backhoe operators unearth a Mark 81 bomb. Bomb disposal experts from Moffett Field in Mountain View, Calif., are flown in by the Sacramento County Sheriff's Department to dispose of the bomb. They dig a pit, put the bomb in, and blow it up.

Next, the Union Pacific Railroad (UPRR, now owner of the yard) hired a geophysicist to conduct magnetometer tests of the construction area to look for more bombs. None were found. Four days later, after the UPRR, Sacramento County Sheriff's Department, and the geophysicist said they didn't expect to find more bombs, *eight* were found at the western end of the switch yard near the community of Antelope, Calif.

Unexploded ordnance (UXO) experts returned from Moffett Field and, along with the Sheriff's Department, put the bombs in pits and built berms around them. Then the County Sheriff evacuated 300 to 400 homes near the rail yard, and at 2 a.m. blew up the bombs. The explosions shattered windows, cracked walls, and rained shrapnel through the roofs of nearby homes.

Controversy also rained down with the 2 a.m. fireworks. People were upset about the handling of the bombs, so UPRR, the California Environmental Protection Agency (Cal EPA), and Sacramento County asked the U.S. Army Corps of Engineers for help.

Sacramento District was the contact for the Corps.

Enter the UXO busters -- A.R. Smith, the district's UXO guru from Fort Ord, Calif.; project managers Mike Metro and Linda Finley-Miller; UXO specialist Jim Walker from Los Angeles District; plus experts from Corps Headquarters and the Huntsville Engineering and Support Center.

The Engineer Team of Choice

Working with the railroad, county, and state, Smith and Metro developed a plan to check the construction site for bombs and to let the railroad safely continue with its construction. UPRR selected CMS Environmental Inc. of Tampa, Fla., to survey the site and do the excavation to remodel the switch yard.

"One of the challenges was finding the bombs buried with tons of scrap metal from the 1973 explosion," Finley-Miller said. "The magnetometers the contractors used are state-of-the-art, but they can't tell the difference between a buried 250-bomb and an axle from a railroad car."

"Fortunately, the Mark 81 bombs were shipped without fuses," said Smith, who spent 30 years as a UXO expert in the Army before joining the district's Fort Ord office. "Without the two fuses needed to detonate each bomb, it takes a great deal of pressure to set one off."

"A.R.'s personality was the key to reassuring the people living around the rail yard that an expert was on the job, and that his first goal was to ensure their safety," said Jim Taylor, Public Affairs Office. "In public meetings, agency conferences and with news reporters, A.R. explained how the excavation and bomb removal would proceed. When he assured residents that he would do everything in his power to see that no bombs were detonated in the railyard, people took him at his word. Everyone quickly learned you can rely on A.R.'s word. At every meeting, people would ask, 'Is A.R. here yet?' As soon as he arrived, there was a collective sigh of relief."

The area the railroad needed to excavate was 1,000 feet long and 180 feet wide. Under the watchful eye of either Smith or Walker, CMS had 14 UXO technicians, 14 heavy equipment operators, and one magnetometer analyst working in the survey and removal operation. The contractor used magnetometers to check for metal, then carefully removed soil in six-inch layers until 2.5 feet were removed. Then, more magnetometer surveys were made, and another 2.5 feet of soil was removed.

This process was repeated until the excavation reached 12 feet. Aerial photographs taken in 1973 show that the deepest craters were only 10 feet. The additional two feet excavated was a safety precaution.

On Dec. 22, they found a bomb. This time it was safely put in a crate and stored in a bombproof bunker built at the site. On Dec. 15, they unearthed another one. It, too was safely stored until they both could be hauled by special truck to Sierra Army Depot near Susanville, Calif., for disposal. By Dec. 22 excavation work was done, and everyone went back to their duties.

Then on April 21 a bomb rolled out of an excavator unloading soil dug outside the original search area. Fortunately, Smith was in Sacramento on other business, and Finley-Miller got him on his cell phone, just as he was leaving town. The Corps responded in less than an hour of receiving the call from Sacramento County.

More hastily called meetings, news briefings, and careful excavation followed, as did four more bombs. These went to a disposal site in Louisiana. The excavation is complete, and no more bombs were found.

(Jim Taylor of the Public Affairs Office and Linda Finley-Miller contributed to this article.)

This gaping hole and debris used to be a pizza parlor in St. Cloud, Minn. The State of Minnesota asked the St. Paul District to provide structural engineering experts to assess damage after a natural gas explosion. (Photo courtesy of St. Paul District)

Natural gas explosion brings Corps aid

By Peter Verstegen
St. Paul District

An untouched Bloody Mary with a fresh stick of celery in it rested on the bar. Tom Sully, a structural engineer with St. Paul District, immediately saw the irony. That drink and others, along with coins and currency, rested untouched amid dust and debris. The day before, Dec. 11, a natural-gas explosion had severely damaged the bar in downtown St. Cloud. Nearly 50,000 people live in this central Minnesota community. Four of those people died in the explosion, and more than a dozen others were injured.

A pizza parlor, the building next to the bar, was ground zero. The parlor was empty at the time. A pile of bricks, shattered glass, and jagged concrete were all that remained.

"I could tell that people left the bar in a hurry," said Sully. "When we got there, the building was partially collapsed. It was unstable." Both buildings were among four structures severely damaged by a natural gas explosion at 11:40 a.m.

News reports said the explosion happened when contractors, drilling a support for a utility pole, struck an unknown buried block of stone which diverted an auger sideways and ruptured a nearby gas line. About 30 minutes after the rupture, an explosion destroyed four buildings.

Mike Dahlquist, a structural engineering specialist trained in urban search and rescue, assesses a partially collapsed bar in St. Cloud, Minn. The bar was next to a pizza parlor destroyed in a natural gas explosion. Drinks and money were still sitting on the bar amid the dust and debris. (Photo courtesy of St. Paul District)

Fortunately, public safety and utility company officials had ordered evacuation of office workers and residents from the six-block area in the vicinity of the blast.

The Minnesota Department of Safety requested emergency expertise in structural engineering from St. Paul District. In response, the district dispatched Sully and Mike Dahlquist, a structural specialist trained in urban search and rescue, to help local building officials assess structural integrity of buildings near the scene of the explosion. They worked with the city building officials, under direction of the fire chief who was the incident commander.

"We went in as a team," said Dahlquist. "The number one benefit is safety. Number two is consultation. Two pairs of eyes are better than one. We prepared a post-incident evaluation of damaged structures to establish entry and use restrictions."

The team worked with the city on Dec. 13 to tag 14 buildings with red, yellow, or green placards noting specific restrictions on using the building. They tagged six addresses red, meaning no entry. Five received yellow tags, warning of limited entry. Three addresses received green tags indicating no structural reasons for restrictions on entry.

The team also consulted with officials from the National Transportation Safety Board to convey the dangers related to working with their heavy equipment next to the unstable buildings.

Emergency preparedness and response is primarily a state and local responsibility, but when the disaster exceeds the capabilities of state and local interests, the U.S. Army Corps of Engineers may provide help to save human life, prevent immediate human suffering, or mitigate property damage. In incidents like the St. Cloud explosion, the Corps gives emergency assistance top priority and provides immediate response using available resources and expedited procedures.

The Engineer Team of Choice

Corps helps curb Texas illegal entries

By Judy Marsicano
Fort Worth District

Illegal aliens are having a tougher time entering the U.S., especially if they try to come through Texas. The Immigration and Naturalization Service (INS) reports a drop in arrests of Mexican nationals, a testimony to INS' commitment to strengthen the border.

The U.S. Army Corps of Engineers is one of the INS' partners in that effort.

Since 1995, border patrol agents in Texas have increased from 1,958 to 2,999 and inspectors from 507 to 855. This staffing increase calls for building new facilities and improved technology, as part of INS' focus on improving enforcement of immigration laws.

In July 1997, INS introduced "Operation Rio Grande," a multi-year plan to enhance enforcement along the 1,200-mile Texas border. That same month, INS signed a memorandum of agreement with Southwestern Division, beginning the Corps' nationwide project management support.

Fort Worth District established the INS Architectural-Engineering Resource Center (AERC), which has since been the "One Door to the Corps" for INS.

The Engineer Team of Choice

During fiscal year 1998 (FY98) alone, nearly $67 million went to the AERC, but all the money didn't stop in Fort Worth. About 49 percent of it went to Galveston, Albuquerque, Los Angeles, Norfolk, Sacramento, and Honolulu districts.

"Early on, in the competition with General Services Administration for this mission, we decided that a strong point for the Corps was our diversity," said Ralph Barrett, AERC director. "The approach that won over INS was our offer to bring the entire Corps to INS, which has proven to be effective."

This formation of Border Patrol agents is a small sample of the force that the Corps supports in the Immigration and Naturalization Service. (Photo courtesy of Fort Worth District)

Districts are solicited for expertise and their ability to execute projects to INS' expectations, Barrett said. "The AERC transfers funds to the district's project management and acts on the behalf of INS to see that project management plans are prepared and executed. The AERC also works to standardize processes and deliverables in work for INS."

Achievements for 1998 were wide-ranging. With a deadline of Sept. 30, the AERC committed the Corps to award construction contracts for new projects at Del Rio and Laredo, Texas (Fort Worth District); Presidio, Texas (Albuquerque District); and at Rio Grande City, Texas (Galveston District). INS had not selected sites for three of the four projects, so besides the expedited design process, the Corps also performed expedited real estate acquisition and environmental assessments.

Three of the four contracts were awarded by Sept. 30. The project at Rio Grande City could have been awarded, but INS agreed an alternate strategy would be more beneficial and approved a delay. It is slated for award this month.

In addition, the AERC is helping INS prepare the budget for the FY01 construction program, to be submitted in March.

The AERC has also offered the Corps' real estate expertise to perform market surveys for coming projects and conduct engineering feasibility studies on preferred sites. The object is to acquire real estate for projects the year before design starts.

Other support to INS includes managing the underground storage tank removal program, environmental assessments, master planning, mapping, and economic analyses.

Mansion becomes holding tank for illegal immigrants

By Tara Colangelo
Buffalo District

A rich man's abandoned summer retreat now holds suspects detained by the Immigration and Naturalization Service (INS), thanks to the Interagency and International Support Program and Buffalo District's management of the renovation. Cragside Manor, a 19th century mansion in the Thousand Islands on the St. Lawrence River in upstate New York, is now the home of the U.S. Border Patrol.

Steel tycoon H.A. Laughlin built Cragside Manor in 1886. The Laughlin family used the Queen Anne-style house as a summer retreat until the 1920s. It changed hands several times until 1964, when it became U.S. property leased to the Coast Guard and later sold to the State University of New York. In 1993, the federal government regained the property and allocated it to the INS.

"The location is perfect for a border patrol station," said Michael Barton, project manager. "With Canada right across the St. Lawrence River, this is a prime location."

Cliff Konig, the INS agent in charge at Cragside, agrees. "It's gorgeous out here and the location is accessible and convenient for us."

Cragside will be a Border Patrol substation along the St. Lawrence River. The patrolmen will enforce the legal entry of goods and people in and out of the U.S.

"By far, the most frequent crime is smuggling illegal aliens into the States, but we've had our fair share of drugs and weapons possessions," said Konig. He adds that illegal exportation of tobacco and alcohol from the U.S. also is attempted.

Cragside, a 5,400-square-foot building, was renovated to include offices for nine agents and one agent-in-charge, locker rooms, holding cells, a kitchen, a conference room, a dock for water patrol, and a garage. An improved entrance road and driveway will be built, as well as a water system and an on-site waste disposal system.

Cragside was structurally sound, but needed many renovations. Buffalo District managed contracts which gave the old mansion a face-lift, including installing new plumbing, electrical, paint, windows, heating, and carpeting.

Since the building is more than 100 years old, special care was taken to ensure the historical accuracy and preservation. The Alexandria Bay Historical Society and firms specializing in historical preservation provided their expertise during renovation. Cragside Manor is now restored to its turn-of-the-century glory.

Cragside Manor, once home to a steel tycoon, now houses the U.S. Border Patrol along the Canadian border. (Photo courtesy of New York District.)

"When we wanted to replace some windows, for instance, we couldn't go out and buy just any windows," said Konig. "We had to have custom-made windows. Same thing went for replacing the porches. Everything had to be done with the historical integrity intact."

The project, which began in August 1997, was completed last October and the INS has moved in.

"Everything's just great," said Konig. "We're enjoying the facility and are very pleased with the Corps' participation."

Project gives at-risk youth new outlook

Article by Richard Carlson
New England District

New England District, together with Project COFFEE of Oxford, Mass., recently completed building a new handicap accessible wildlife viewing blind at Hodges Village Dam.

The viewing blind, set along one of the dam's access roads, was built so that visitors to the project could observe the various forms of wildlife which frequent the meadow below. Visitors should be able to see migratory geese, osprey, hawks, falcons, songbirds, turtles, red fox, and deer.

Project COFFEE is an alternative education program designed to meet the academic, occupational, social/emotional, and employability needs of at-risk high school students from central Massachusetts. Project COFFEE provides dropout prevention and reconnection programs. It provides at-risk students with challenging academic instruction, realistic occupational programs having a particular emphasis on technology training and work-study opportunities with prospective employers.

The Engineer Team of Choice

Construction began last September by 10 youth volunteers enrolled in the alternative education program. Two shifts of five volunteers supervised by a crew leader and by master carpenter William Hayes did the work. New England District supplied material. Ranger Merl Bassett planned, designed, and coordinated the project. Bassett also handled all interaction with the Project COFFEE volunteers.

The blind was built on six wooden utility poles set at the site under a Challenge Cost Sharing agreement with the Massachusetts Electric Company. When the last two poles were to be set out further than the pole-setting equipment could reach, the MassElectric employees set the last two poles by hand.

The remainder of the project involved setting large timbers in place, building the platform on the timbers, and then building a three-sided enclosure with observation ports. The volunteers built and installed benches so people may sit and look out through the ports.

The observation blind was completed during National Public Lands Day last Sept. 26. Several of the volunteer crew members from Project COFFEE were on hand to receive the accolades of those attending a small ceremony to recognize their contributions.

"When I saw this project in the beginning I was scared that we couldn't do it," said one of the young volunteers. "But we did it!"

Project aids community, helps juvenile offenders

By Amy Clipston
Norfolk District

Imagine a project that benefits the community by keeping juvenile offenders out of trouble *and* saves the U.S. Army Corps of Engineers more than $8,000. Norfolk District had such a project when young men from the Norfolk Marine Institute (NMI) demolished a building at the district's Lake Drummond campsite.

According to Dillard Horton Jr., chief of the Acquisition Management and Disposal Branch of the district's Real Estate Division, the hunter's cabin was built about 30 years ago by a citizen without the government's permission.

For several years, Real Estate employees thought the cabin was on Department of Interior's property instead of Norfolk District property. However, the district eventually determined that it was on Corps property.

"We approached the owner and offered two options -- he could either remove the building or we could lease the land to him," Horton said. "After several months, the owner abandoned the building without accepting or admitting any responsibility or accountability for its removal."

The district advertised the demolition job for about $8,000. Then Christopher Burns, executive director of NMI, approached Ralph Stine, facility administrator at the Corps' Great Bridge reservation, and asked if NMI could use an area near Great Bridge Locks for nautical classes.

NMI is a not-for-profit, non-residential educational program for male and female juvenile offenders, ages 14 to 18. The program combines academics with nautical programs to provide young people an alternative to state incarceration. Students are assigned to the institute through the courts and they graduate only by earning their General Equivalency Diploma (GED), or enrolling in their neighborhood school, starting college, or getting a job.

"We help the kids get re-motivated to learn," said Burns. "For them, that door has been closed for a long time, and we try to help them open it again. Our big focus is to get them eligible for their GEDs."

The institute's marine program is extensive. The students study seamanship, environmental studies, and marine science. Some of their projects include oyster replenishing, fishing, and participating in Clean the Bay Day, an annual project in which local volunteers clean up the Chesapeake Bay.

NMI receives funds from the Virginia Department of Juvenile Justice, the Norfolk and Portsmouth court service units, and the Norfolk and Portsmouth Public Schools. Though independently run, the institute is affiliated with Associated Marine Institutes, a parent company operating more than 40 youth development programs nationwide.

The institute found an alternate site for their nautical classes, but Burns also heard about the campsite at Lake Drummond. He offered to have his students demolish the cabin during camping outings. The district agreed and sold the hunter's cabin to NMI for $1.

The students tore down the hunter's cabin at Lake Drummond as part of NMI's first Safety Net program. Male students are put in Safety Net as punishment for negative behavior in the institute's day program. While in Safety Net, the students live in a military-style boot camp 24 hours per day.

"The kids stay secluded with plenty of work to do," said Floyd Pettaway Jr., the institute's Safety Net director. "They don't want to come back to the Safety Net."

Juvenile offenders from the Norfolk Marine Institute find demolition work a tough and dirty job. The institute's program provides an alternative to prison and aims to get the young people focused toward education. (Photo courtesy of Norfolk District)

The boys lived on-site in tents in a primitive camp. They carried in their drinking water, ate military MREs (meals, ready to eat) and slept on cots. To ensure safety and discipline, Pettaway slept in the tents with the students.

The students tore down the cabin with hand tools, broke up the wood and put it in piles for disposal. Stine coordinated the dumping with the city. Demolishing the cabin wasn't all the students did. They also participated in therapeutic counseling sessions, physical training, and courses to develop leadership and discipline.

Pettaway took five to 10 students to the campsite at a time at three week intervals, and they worked five days per week. The project began in December 1997 and finished last October.

"The project had a positive effect on the students," said Pettaway. "The kids want to do better and not go back to Safety Net. They really don't have a choice. They are given instructions and need to comply or stay out at the site longer."

Norfolk District representatives seem pleased with the students' work.

"At first I had doubts about letting the students take down the cabin," Stine said. "But these guys did a bang-up job. You can't tell today that there was a cabin there."

"The project went well," said Horton. "It afforded these young men an opportunity to work in the wilderness and realize that hard labor is not fun."

"I loved working with the Corps," said Burns. "Ralph Stine was fantastic. The folks with Halifax, the contractor at the Lake Drummond site, were very helpful too. They helped in different aspects of support, such as taking the boys out to the site by boat. I was impressed with everyone associated with the project."

The NMI's current Safety Net project is building a nature trail in the Back Bay National Wildlife Refuge in Virginia Beach, Va. The project started after Stine put Burns in touch with the U.S. Fish and Wildlife Service.

"They were terrific, and I had no trouble with them whatsoever," said Stine. "I highly recommend them for any job."

Customer support improves

By Aldo Brazzale
Southwestern Division

Southwestern Division (SWD) is making the Installation Support Forward (IS Forward) program a reality. The concept, first briefed during the 1996 Senior Leadership Conference (SLC) by Richard Armstrong, then Deputy Director of Military Programs at Headquarters and now Director of Programs Management in SWD, moves the Corps closer to the rest of the Army by bridging communication gaps.

Just before the SLC, Military Programs Directorate sent questionnaires to all customers to evaluate the Corps' service and ask them to identify areas needing improvement.

Ideas

"The feedback wasn't good," Armstrong said. "I knew we had to improve support to these customers if we wanted to accomplish our IS mission. I had two ideas -- first, collocate our Resident Engineers with the Directors of Public Works where possible. Second, assign a Project Manager to the DPW's office to coordinate all work the Corps does at that installation. Both would improve communication, better support the DPWs and build better relationships."

In mid-1997, Armstrong and Maj. Gen. Phillip Anderson, then Director of Military Programs, presented a proposal to Lt. Gen. Joe Ballard, Chief of Engineers. Ballard gave his approval.

Maj. Gen. Al Genetti, Deputy Chief of Engineers, led efforts to provide sufficient Operation & Maintenance (Army) funds to pay for the positions. Close coordination with major command engineers identified where to best place IS Forward personnel. The spaces and funds were distributed to division offices early in fiscal year 1998.

SWD received four positions. But, from its own Campaign Plan initiatives, the division already had two IS Forward staff in place at Fort Hood, Texas, and Fort Sill, Okla. The division added two more at Fort Sam Houston, Texas, and Fort Bliss, Texas.

"The IS Forward assists the DPW by facilitating operations and maintenance of the installation," said Gerald Penland, SWD's Military Programs Team Leader. "IS Forwards, while attached to SWD and located in the DPW office, are under the control of the installation's geographic support district."

Responsibilities

The IS Forward is the DPW's "One Door to the Corps." IS Forward responsibilities include:

- Increasing efficiency, quality, and timeliness of on-going activities.
- Recommending ways the Corps can further assist the installation.
- The customer satisfaction advocate and Corps program coordinator for the installation.
- Providing on-site coordination between installation customers and Corps activities. This requires proficiency in installation activities related to real property operation and maintenance, environmental compliance and restoration, and military construction.
- Participating in DPW activities to enhance both personal and Corps understanding of DPW functions and processes.

Mike Johnson shares a laugh with Ron Krause, Director of Public Works at Picatinny Arsenal. (Photo courtesy of New York District)

DPWs like collocation

By Michael D. Johnson
New York District

The Installation Support Forward program is a U.S. Army Corps of Engineers initiative to enhance support to the Army. To understand the program, let me tell you about my experience.

Imagine you are a Corps employee, but you work at two military installations, one day at Fort Monmouth and the other day at Picatinny Arsenal, both in New Jersey. Let's say your desk is outside the door of the Director of Public Works (DPW), and that director does your performance rating. That is my set-up as a Forward Installation Support Manager (FISM).

In fiscal year 1998 (FY98), there were 25 such positions. They require flexibility because assigned tasks depend on what's happening that day, but let me give an idea of what is involved.

I am treated as a senior member of the DPW staff. I attend all meetings, meet one-on-one with the directors, and see day-to-day DPW operations first-hand.

In turn, the DPW has a Corps employee to address immediate issues. For example, recently the DPW had an immediate suspense to provide the status of the installation's Year 2000 (Y2K) initiative. With some quick coordination, I got him the Corps' Y2K status at that installation to incorporate into their report.

"Daily interface with the DPW staff allows more effective customer feedback."

Another time, the DPW requested the district's support for a housing privatization initiative. With a short suspense, the Corps' capabilities were added to a briefing for their commanding general. These situations come up often, and the FISM makes the Corps more responsive.

Daily interface with the DPW staff also allows more effective customer feedback. For example, one week the DPW, the district, and I worked together to define a community center concept that incorporated customer requirements into a fast-paced Congressionally Added Housing project.

The FISM also lets the DPW identify district or Corps processes they want improved. For example, Picatinny Arsenal wanted as-built drawings processed quickly. Together with the Resident Office, we exhibited recent Corps procedural changes, and future as-built turnover will be monitored to assure installation needs are met.

This position has also given me a better understanding of what is important to the installation. I share this with the Corps so these issues are addressed in design and construction. For example, attracting and retaining tenants requires that facilities accommodate telecommunications and computer technology. So we assure this is considered in design. Staying aware of customer concerns, and applying them to our processes, is critical to customer satisfaction.

So the FISM's responsibilities are diverse, but the bottom line is better customer support.

What are my impressions of the DPW? They have a tough job. They are responsible for all structures, infrastructure, environmental compliance, master planning, housing, and fire service on their installations. Job pressures are great; tenants and people in housing expect good service. If the air conditioning fails on the hottest day of summer, or a roof leaks or a pipe breaks, they want a fix *now*. It's an unending responsibility. And planning is critical to prepare an installation for the changing Army.

It is also important to understand the challenges facing the DPWs. At installations, all utilities are scheduled to be privatized in FY99. Most blue-collar positions have been, or will be, privatized. All DPW professional employees are being studied to determine if their position is Government-In-Nature or whether they can be privatized.

At Picatinny Arsenal and Fort Monmouth, at least half the DPW staffs have disappeared in the past five years due to budget cuts, and the trend continues. As engineers leave, the installations cannot hire to replace them.

So money is the most important issue to the DPW. Therefore, the most critical factor affecting the Corps' success is how we manage their OMA and RDTE funds. A $30,000 savings pays the salary of a secretary for a year, while $55,000 pays the salary of an engineer.

Another message from the DPW is that they are responsible for all structures built by the Corps, so quality and long-term maintenance are important.

Around the Corps

SES news

Dr. James Johnson is the new Chief of Planning Division in the Directorate of Civil Works. He was previously Chief of Planning Division in Baltimore District.

Control tower

Many active-duty Air Force bases still use World War II-era control towers. But some bases under the Air Education and Training Command (AETC) will get new towers with help from the U.S. Corps of Engineers. The new tower at Little Rock Air Force Base (AFB) will be a 110-foot reinforced concrete structure with brick veneer. The cab where the traffic controllers work will be 586 square feet.

Funding was inserted into the 1998 budget at the last minute, which meant design and award time was short. At about the same time, AETC's Control Tower Design Guide was released.

"Our team worked through the guide and applied the design guidelines to the Little Rock tower," said project manager Jim Pfeifer. "So this project is the first to be designed under the new guidelines. It's a prototype for other tower designs."

The new control tower at Little Rock Air Force Base is three times larger than the one it replaces.

Because of the district's work on the tower and their grasp of the Control Tower Design Guide, AETC requested the district to handle all their tower replacement work.

Little Rock District is working with Mobile District on the tower at Tyndall AFB, Fla., Los Angeles District on the tower at Luke AFB, Ariz., Fort Worth District on the tower at Laughlin AFB, Texas, and Tulsa District on the tower at Altus AFB, Okla. Each tower will cost between $3 million and $4 million.

"We're treating this with the 'One Door to the Corps' philosophy," Pfeifer said. "We will manage the overall programs, but the geographic district will be the project manager and construction manager."

The Little Rock AFB control tower is scheduled to be in operation by early spring 2000. Contracts for the four remaining control towers should be awarded by next September.

Water resources support

The Topographic Engineer Center's Hydrologic Analysis Branch (HAB) received a plaque to honor their water resources information support to the Water Supply Platoon of the Second Marine Expeditionary Force in several deployments. The platoon produces potable water from undrinkable sources.

"Before the platoon's deployment to Estonia last year, one of our hydrologists identified potential radionuclide contamination in the water source the platoon was going treat," said Laura Dwyer, chief of HAB. "Once the platoon arrived, they confirmed there was contamination. If we hadn't alerted them, they wouldn't have known to test for this."

The HAB provides water source and water quality information as part of its Department of Defense Water Resources Data Base mission. Recent support to the platoon included Hurricane Mitch disaster relief operations in Central America and a training exercise in Iskenderun, Turkey.

Videotape

The Geospatial Information Division of the Topographic Engineering Center (TEC) recently developed a videotape titled "Geospatial Information for the 21st Century Land Warrior." TEC produced this videotape to teach Army planners and users about the effort, time, and resources required to fill Army high-resolution terrain data requirements.

The videotape discusses the geospatial information challenge confronting the Army. It stresses the warfighter's role in the timely articulation of terrain data requirements. Finally, it highlights the changes underway in the geospatial information community to implement plans to address the problem of data availability in the future.

Technology award

LaNita Bonds, a project manager in Nashville District, recently received the 1998 Women of Color Technology Award for Educational Leadership. The Career Communications Group of Baltimore presents the award annually to recognize an engineer's efforts in advancing the merits of science and technology for women of color. Bonds accepted the award on Sept. 26 at the Career Fair and Trade Show in Atlanta.

In the past 10 years, Bonds has volunteered hundreds of hours to tutor and mentor minority high school students in math and science to help them prepare for college. She also helps them prepare for college entrance exams.

"A high school student comes to Sylvan with no basic math skills and is ready to quit school," said Audrey Cline at the Sylvan Learning Center where Bonds works part-time. "LaNita's unique way of working with this student helps her recapture deficient math skills and regain confidence."

Computers to schools

New England District donated more than 400 computers to about 25 schools throughout New England.

Dr. Jay Simmons, a reading coach for Lewis Middle School in Roxbury, Mass., found out about the computers and knew they would improve the educational environment for children in the inner city school.

Simmons and special needs teachers Tom Lewis and Keith Durhil took a day off and came to the district with a rental truck to pick up the computers. The teachers paid for the truck and fuel out of their own pockets.

The 390-student school received 82 pieces of computer equipment, two typewriters, and seven printers. The teachers also went to the district's Barre Falls Dam and picked up assorted furniture -- chairs, tables, file cabinets, a copier, and wipe-off boards.

Teachers load their truck with donated computer equipment. (Photo by Mark McInerney)

"They will be of great benefit to the kids," said Simmons. "I was amazed how many of our ninth graders have never used a computer. This will give them an opportunity to get keyboard experience."

Lewis said the computers would be hooked up to the Internet. "We had a couple of Net Days when a company came in and wired the entire school. We're going to connect the computers to the Internet and that will act as our library."

"The computers will give inner city kids who don't get a chance to go to the library the ability to access important information," said Durhil.

Awards to JED

Pacific Air Forces (PACAF) selected Japan Engineer District (JED) as the PACAF Construction Agent of the Year. The award recognizes JED's excellence in serving the Air Force in Japan and notes the district's success in meeting construction milestones and completing facilities within budget and on schedule. The award also noted the district's innovative construction techniques and the progressive Project Delivery Team management concepts.

JED also recently received word that the National Partnership for Reinventing Government approved a Hammer Award for efforts by the district and U.S. Forces Japan in negotiating the Special Action Committee on Okinawa program implementation with the government of Japan.

Georges storm surge

Coastal and property damages from Hurricane Georges have prompted engineers and scientists to record floods and storm surge along the Gulf Coast. The Corps and the U.S. Geological Survey are collecting and analyzing data from Hurricane Georges which struck near Biloxi, Miss. on Sept. 28.

Because every coastal area, river, and stream from Mississippi to the Florida panhandle experienced serious flooding, this information is critical to emergency management officials who must respond to future severe weather.

Record flood stages of 20.4 feet occurred at Flomaton, Ala., on the Escambia River; 21.4 feet at Crestview, Fla., on the Shoal River; and 25.57 feet at Baker, Fla., on the Blackwater River. Storm surge was 9.6 feet above mean sea level in Pascagoula, Miss.; 8.8 feet recorded in Biloxi, Miss.; 8.0 feet in Mobile Bay; 8.5 in Mobile, Ala.; and 7.7 feet at Pensacola Beach, Fla.

Contracts database

The Congressional Contacts Database (CCDB) was developed to provide a single central repository for information on all congressional contacts, activities, and issues involving the Corps. The database will prove useful to serve Congress and for the command to gain information on Corps issues and contacts with congressional interests.

Beginning Jan. 6, all congressional contacts, activities and issues are documented and recorded using the CCDB. The database is accessed via the Internet using an assigned user ID and password. The Office of Congressional Affairs provides user IDs and passwords for both write access and read-only access to the database.

Video teleconference

Southwestern Division (SWD) provided video teleconferencing equipment for celebrities and family members to talk with about 20 Texas sailors stationed on the aircraft carrier *USS Enterprise* in the Arabian Gulf. Sports announcer Pat Summerall and members of the Dallas Mavericks basketball team were among those taking part.

The Navy Office of Information Southwest approached SWD about using its equipment. The division linked its system to the Navy in Norfolk, Va., who relayed the signal to the *Enterprise*. The aircraft carrier and several other ships are in the Gulf enforcing the no-fly zone over Iraq.

Find civil works info fast, easy on Web

Article by Moody K. Miles
Photos by F.T. Eyre
Headquarters

Can you list all the active civil works flood control projects in a U.S. Army Corps of Engineers district? Could you quickly locate large-scale maps of Corps dams or levees for emergency response coordination?

People in Headquarters and every district, division, center, and lab spend hours gathering, organizing, analyzing, and disseminating civil works information. The problem is not lack of data, but knowing where to get it, and being able to display and share it.

So the Corps has implemented the Civil Works Digital Project Notebook (CW-DPN). It is an electronic map-based application sponsored by the Headquarters Civil Works Engineering Division and developed by the Topographic Engineering Center (TEC).

CW-DPN provides general historical information on all Corps civil works projects. It replaces 39 District Project Map Books which were maintained by the districts to contain project information, and which were updated manually and submitted to Headquarters and congressional offices every two years. From these notebooks, researchers gathered project information including dimensions of structures, operations and maintenance costs, and authorizing legislation.

Alex Lee, an electrical engineer, and Rebecca Ragon, a technical editor, use the Digital Project Notebook to find information about civil works projects. Both work for the Topographic Engineering Center.

CD-ROM

The first edition of the CW-DPN in 1996 put the information in those 39 notebooks onto two CD-ROMs, and featured a geographic information system (GIS) interface to display and query the data. This off-the-shelf GIS displayed projects on a clickable map at various scales, and retrieved information based on criteria including geography, funding, project work item, type, category, and class. Information for each project could be retrieved, along with large-scale digital maps and photos.

The CD-ROM version consolidated more than one gigabyte of data and enabled information retrieval for all civil works projects in seconds. The product was also less costly to produce, since districts no longer needed to print and distribute their project notebooks. A district could electronically update the database, gather new digital maps and pictures, and send the files to TEC where the CDs were made.

Internet version

However, now an even more accessible CW-DPN, with more map-based display and query capability, has replaced the CD-ROM version.

About a year after the CD-ROM CW-DPN, an Internet version was developed and is available through the Civil Works portion of the Headquarters Homepage (www.tec.usace.army.mil/address/). Designers envisioned a Web-based CW-DPN when the project began in 1996, but Web technology and GIS applications were not mature enough then, resulting in the interim CD product. However, Web mapping and GIS now enable powerful map-based data query and retrieval functions by any Internet user. TEC, using the MapGuide® software by Autodesk, developed the Web CW-DPN which has all the map features, project information and query capability of the CD version.

The Web CW-DPN can also expand to include more details or other information, since the data is not limited by the disk space on CD. Therefore, a user with a Pentium computer, Web browser software, and an Internet connection can view maps of Corps projects which include roads and highways, rivers and streams, buildings, weather information, and various other information about the projects.

The Web CW-DPN also makes the update process more efficient. With password access to the CW-DPN Web server through the Internet, a district can modify their part of the database, or upload new pictures or maps. TEC is still responsible for enhancing the graphics and overall operation of the CW-DPN.

Sharing information

Probably the most significant potential of the Web application is sharing information with other sites. With Internet connectivity to virtually any site offered through the World-Wide Web, data or features from one application can be used by another site to supplement its own information.

For example, the Navigation Data Center (NDC) of the Water Resource Support Center offers information through their website on navigation locks. As the user selects a particular lock from a clickable map, a link is made to the CW-DPN to display the large-scale map, photo, and text information from the CW-DPN database for that lock.

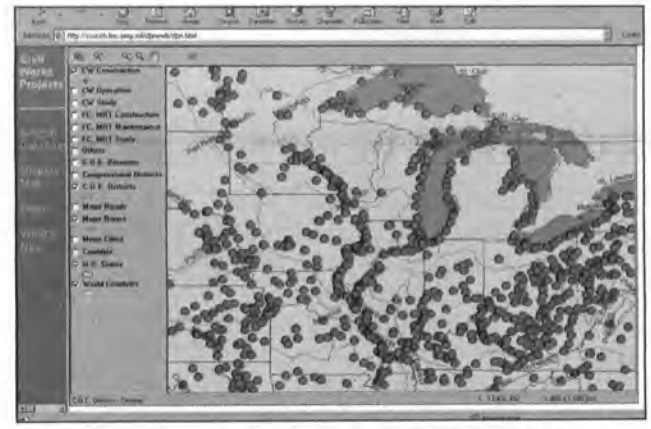
The connection is transparent to the user, and the NDC avoided the tedious data collection, formatting, database integration, and Web programming to include this information. The only effort required was coordination with TEC for the appropriate address and access parameters.

Similarly, a district could link from their homepage to their project maps, photos and database in the CW-DPN, enhancing their website with negligible effort.

TEC is also exploring links to other sites to supplement the CW-DPN database. Connection to Census Bureau maps for more geographic detail, on-line Corps recreation facilities to determine availability of camp sites, and district sites to access their pictures, navigation charts and project details could all offer extensive information on Corps projects through simple point-and-click procedures.

Public access

The DPN website is open to the public to make them more aware of the Corps' Civil Works program and the projects in their region. To make the Web-based GIS work, a browser plug-in must first be downloaded and installed. The plug-in is also available free at the CW-DPN website.



Simple screens of digital data, top photo, contain the same information found in 39 District Project Map Books, bottom.

(Anthony Niles, a civil engineer with the Topographic Engineering Center, also contributed to this article.)