



The flooding in Grifton, N.C., is typical of the damage caused by Hurricane Floyd. (Photo by Jonas Jordan)

Corps ready for Floyd, deals with aftermath

A Category IV storm bigger than Texas, Hurricane Floyd had the potential to be "the storm of the century." The entire southeastern coast of the U.S. prepared for the worst. Coastal residents from Florida through North Carolina participated in the largest peace-time evacuation in history, Disney World closed for the first time, and more than 6,300 Army and Air National Guard personnel from Florida, Georgia, South Carolina, North Carolina, and Virginia were ordered to active duty.

The U.S. Army Corps of Engineers (USACE) was an important part of the preparation, and of the flood response after the storm. Hurricane Floyd eventually turned north. It skirted the coast and turned into a huge rain machine as it weakened and made landfall near the border of North and South Carolina on Sept. 16.

Before the storm

While Hurricane Floyd stormed up the East Coast, teams from USACE were moving in behind the storm to begin preliminary damage assessment, distribute ice and water, provide emergency power, and initiate recovery operations.

USACE worked with the Federal Emergency Management Agency (FEMA) on emergency preparation and recovery mission assignments worth \$2.5 million. South Atlantic Division coordinated USACE efforts from Florida through North Carolina. North

Atlantic Division (NAD) coordinated USACE support from Virginia north through New England.

Missions assigned by FEMA caused five Planning and Response Teams (PRTs) from Mississippi Valley Division (MVD) to deploy to purchase and distribute 300,000 pounds of ice. 100,000 pounds were shipped to Dobbins Air Force Base, near Atlanta, Ga., and 200,000 pounds to Shaw AFB, near Columbia, S.C. They moved ice to distribution areas as directed by FEMA. FEMA also directed that another 400,000 pounds of ice be placed in reserve.

In all, a total of 38 PRTs were either alerted, activated, or deployed for Hurricane Floyd operations. The five-to-six-person teams are configured for specific missions such as purchasing ice and water; arranging emergency power, temporary roofing, engineering, and temporary housing; and debris clearance.

In addition, Charleston District headquarters was prepared to move to a site west of Columbia, S.C., while Savannah District headquarters was prepared to move to Warner Robins Air Force Base near Macon, Ga.

Two of the Corps' Deployable Tactical Operations Centers (DTOCs) from Mobile, Ala., arrived Sept. 15 at the preliminary mobilization-staging site at Fort Gillem, Ga., near Atlanta. DTOCs are self-contained mobile command centers with on-board

Science team studies 'quake effect in Turkey

Three scientists from the Waterways Experiment Station (WES) traveled to Turkey on Aug. 20 to observe of the effects of the Aug. 17 earthquake centered at Izmit. The confirmed death toll is about 12,000, with thousands of concrete structures destroyed or heavily damaged.

The principal mission of Dr. Ellis Krinitzsky, Dr. Richard Olsen, and Dr. Mostafiz Chowdhury was to observe and document the behavior of dams, harbor facilities, and ground failures (such as liquefaction, settlement, and sliding) as a result of this earthquake.

The team inspected six dams (soil and earth/rock fill) within 40 kilometers (about 25 miles) of the fault rupture. Officials from the Istanbul Water Administration and other local cities assisted them. Three of the dams experienced minor cracking along the crests. Four dams experienced possible minor slumping at the bottom of upstream or downstream slopes.

A waterfront area in Golcuk two kilometers (1.24 miles) south of Izmit sank about one meter (about three feet) due to unusual fault expression or liquefaction-induced settlement. (Liquefaction occurs when damp soil loses cohesion under the stresses of an earthquake and behaves like a liquid.) Further field testing is required to fully understand the field observations.

In Adapazari, 50 kilometers (31 miles) east of Izmit along the fault rupture, numerous structures experienced liquefaction of their foundations, resulting in vertical settlement as great as 1.5 meters (about five feet) and tilting of buildings as great as 35 degrees. The preliminary field evaluation indicates that liquefaction occurred within a thick, loose, rounded gravel foundation layer. These are among the first documented cases of building foundation failure due to gravel liquefaction; there are numerous cases of similar failures due to sand liquefaction. Adapazari residents also reported that numerous structures had settled one or two stories into the soil; our team found that in all cases these failures were structural collapse of the first or first and second floors into the basements.

The team returned to the Waterways Experiment Station on Aug. 26 and 27.



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Insights

Praise works wonders, but...

By Lt. Col. Tim Carlson
Chaplain, Corps of Engineers

I remember the day very well. Our chaplain and chaplain assistant teams were having off-site training at the Presbyterian Church in Fairbanks, Alaska. As we came into the conference room, we were met by a friendly couple from Seattle, our trainers for the day. What sticks in my mind is the man. Very quickly into his talk he gets on the floor, puts his feet into the air, and begins to peddle an imaginary bicycle! It seemed ridiculous at the time, but his efforts are beginning to make sense to me now.

He was attempting to communicate the power of the word "but" in a sentence. Let me illustrate. "Well John, you've done a splendid job on this project, *but* there's one thing that bothers me." How does this sentence feel to you? This presenter said, "The word 'but' cancels everything that precedes it." *Everything!* It's a bit like telling one's girlfriend, "I really do love you, *but* I love Sally more."

I tend to be compulsive and perfectionist. Often, in the past years, I tasked one of my six children with a chore. Perhaps it was just wiping the table after a meal. I can see myself coming to check their work. "Ah ha! I see a lingering crumb." I then go to the sink, reach for the dishcloth, and

dutifully return to remove the culprit. What have I just communicated to my child? "You cleaned the table, *but* you really didn't. See, I had to come and really do the job."

Sometime ago, my then-young son decided to build a small wooden box. I thought, "This family has true carpenter genes in it. Grandpa was a carpenter, Uncles Arvid and August were carpenters, Dad was a carpenter and now, after skipping only one generation, Nels is returning to his Scandinavian carpentry roots."

I looked at the box. A nail was bent. A side seemed slightly out of square. I remembered the trainer in Fairbanks, upside down and pedaling frantically. So, I tried something counterculture for me. I told my eight-year old son I was *proud* of his work. I liked his initiative. I thought his box was sturdy and his design unique. Not once did I say, "But Nels..."

Today my son is nearly 17. I have never met a person who enjoys trying new things more than he does. He builds smokers to make venison jerky in the yard. He builds containers for growing worms in the woods. He makes roasted flax seed and wheat in the microwave, and scores of other things. He is full of life and continual initiatives. There is almost constantly an atmosphere of surprise as I come home from work and wonder, "What's Nels concocted today?"



I am convinced that the simple choice to eliminate the word "but" as a descriptor for anyone else's work will pay huge dividends. With smaller children it's easy to see one of their creations of art and say, "Johnnie, that's a good picture!" To our surprise, Johnnie replies, "You should see Billy's. He can really draw." Without our knowing it, Johnnie has heard a silent "but." We didn't intend it and, in truth, we never said it. However, comparison among ourselves is so deeply ingrained that to affirm our children, without them automatically comparing their work to others, we need to employ more creative affirmation.

For instance, "Johnnie, I like those colors. They're brilliant. The little man is so unusual and funny to me. I'm delighted with your drawing." Do you see a difference? Here, the parent has chosen to make specific comments that make comparison difficult. He has highlighted detail that only Johnnie had included in his art.

You might be thinking, "So what does that mean to me?" Well, I think that

we, as members of the Corps, will function best as we extend to each other *unqualified* affirmations. I think the creativity we can put into such communication is limited only by our imaginations. Choosing to see the *good* in the newly-created "box" can free a worker to try even harder with his or her next project. If the "but" is only a need of our perfectionist past, let's bury it. As the trainer in Fairbanks demonstrated, it will only continue the frantic pedaling of imaginary bicycles going nowhere.

"If there be any virtue, if there be any praise, think on these things," Paul wrote to the Philippians. What a way to start a new fiscal year. What a way to experience life as we approach a new millennium. What a way to evoke daring, new products in our engineering community that can meet the growing challenges of an ever-changing world.

(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, Department of Defense, or the U.S. Government.)

Corps districts win Air Force 'Oscar'

By Diana Bailey
Norfolk District

Norfolk and Kansas City districts won the Oscar of Air Force awards. Norfolk District is the 1999 Air Force Construction Agent of the Year, and Kansas City District is the Air Force Design Agent of the Year. The awards were presented on Aug. 12 during a ceremony in the Sheraton-Crystal City in Arlington, Va.

In his opening remarks at the ceremony, Gary Erickson, Director of the Air Force Center for Environmental Excellence, emphasized that quality design and construction are paramount in keeping the U.S. Air Force the best in the world. "For quality of force, quality of life is the pinion point," Erickson said.

Dave Duncan, a senior architect at the Air Force Center for Environmental Excellence and the ceremony coordinator, said, "The purpose of the program is to communicate the Air Force's standards of design excellence in the design and construction community."

Norfolk District was nominated by the Air Combat Command (ACC), who earlier this year presented the district with the ACC-wide Construction Agent Award based on the district's performance in overseeing construction at Langley Air Force Base, Va.

According to ACC, the district managed and completed an unprecedented amount of military construction at Langley, valued at \$22 million, with



The Langley Air Force Base Fire Station is one of the projects built for the Air Force by Norfolk District. (Photo courtesy of Norfolk District)

Continued on next page



Recruiters get new Times Square home

Article by Bill Tully
Photos by Vince Elias
New York District

Development in the Times Square area of New York City is booming! Corporations like Disney and ABC Television are building new office complexes, such as the Times Square Plaza, Reuters Building, and Conde Nast Building at the "Crossroads of the World," just in time for the new millennium.

Right at the center of the "City that Never Sleeps," the U.S. Army Corps of Engineers made its own unique contribution to the improved Times Square by rebuilding the historic U.S. Armed Forces Recruitment Station.

The new and improved recruiting office, referred to by locals as "The Booth," reopened its doors to tens of thousands of applicants to the Air Force, Army, Navy, and Marines with a ribbon-cutting ceremony on Sept. 7.

The Booth is the single most successful walk-in recruitment location in the nation. The upgraded station, situated on a traffic island between Broadway and Seventh Avenue at 43rd Street, has stood for nearly 50 years as a symbol of service and commitment by the countless New Yorkers who have joined the military.

A modern stainless steel and glass booth replaces the old, bathroom-less booth, and will serve recruiters and applicants well into the 21st century. New York District supervised the project.

Although it's only 550 square feet, the project had its share of challenges. Overcoming opposition from the Times Square Business Improvement District, which initially condemned the old booth as an eyesore and petitioned the city to evict the recruiters, was the first of several hurdles to clear.

Support from New York City came with the mandate that the new facility conforms with the look of the new, cleaned-up, "Disneyfied" Times Square. The new booth needed to attract more recruits, provide satisfactory amenities for the recruiters, and also get the NYC Arts Commission seal of approval.

New York District worked with the engineering firm of Parsons Brinkerhoff to accomplish these goals, and designed a one-story facility serving all the armed services. The new booth comes complete with a work station for each recruiter, a restroom, and a heating and ventilation system that will dramatically improve the working conditions for all future recruiters.

The \$1.4 million booth is equipped with fluorescent lights in vibrant red, white, and blue forming 35-foot long, 20-foot high American flags on its east and west sides.

To provide further Broadway glitz, the front entrance encloses an 8-by-6-foot video wall to broadcast



Bill Tully, project manager for the new recruiting station in Times Square, poses with his creation. Lots of glass and neon reflect the new "Disneyfield" look at the Crossroads of the World.

recruiting messages from all the services to the 7,000 pedestrians who walk through the vicinity each hour.

Besides the signage and service seals mounted on the front and rear of the booth, a pole bearing the American flag allows recruiters to make the traffic island their home.

"It may be just a little booth bolted onto the steel grates above the NYC subway system, but it will be a sturdy one and no detail has been neglected," said Ray Schembri, construction manager.

The Times Square station holds the national record for the most recruits (10,000 per year), and the most turn-downs (90 percent of all applicants), of any U.S. Armed Forces walk-in recruiting center. It is the site of several historic anti-war demonstrations during the Vietnam and Persian Gulf wars. It is also a place where thousands of people gather every New Year's Eve to watch the ball drop in Times Square.

(Bill Tully is the project manager for the U.S. Armed Forces Recruiting Station in Times Square.)



The new recruiting station replaces this one which stood for nearly 50 years in Times Square.

Oscar

Continued from previous page
another \$8 million in projects currently under construction. Not only were these projects completed on time and within budget, several projects at Langley were completed 30 to 60 days ahead of schedule.

But it was more than "on time and within budget" that distinguished the district.

"It's probably the working relationship we had with the Corps of Engineers, both the military branch and the resident engineers," said Gerald Johnson, now at the Pentagon working with the military construction program for the Air Force in Europe. Johnson was the ACC program man-

ager for military construction at Langley.

Johnson noted that construction at Langley in general is particularly challenging because of historic aspects. For instance, "across the street (from the fire station) you have the old Kahn-designed building. Louis Kahn was a noted turn of the century architect. You have to tie that in with newer design.

"Air Combat Command architectural standards are higher than most private industry," Johnson continued. "The district has to meet a lot of state and federal criteria at the same time that it keeps a working air base going to meet mission requirements."

Johnson praised the whole Norfolk District team, both project managers and field professionals.

"I couldn't really single anyone out because I worked with them all," Johnson said. "We got along and we just like each other. We've been friends for a long time. More than anything, we all liked what we were doing and tried to give a good quality project to Langley."

As Air Force Design Agent of the Year, Kansas City District successfully designed and awarded nine projects valued at \$49 million at McConnell Air Force Base for the Air Mobility Command. According to the nomination, they met or exceeded all

design milestones, despite late criteria and engineering changes. Remarks at the ceremony stated, "Always on the forefront of technology and innovations, the Kansas City District used progressive project design and packaging techniques, electronic bid processes, and unique contract approaches to expedite design, obtain improved bids, and minimize construction costs."

The Air Force also presented individual awards at the Aug. 12 ceremony. Thomas Rudd of Sacramento District received Design Agent of the Year, while Michael Armstrong of Omaha District accepted the Construction Agent award.

Relief wells rehabilitate aging dams

Article by David Longmire
Vicksburg District

Across the country, many dams built years ago are aging and their circulatory systems (relief wells that reduce underground water pressure on the dams) are badly in need of rehabilitation or replacement. Lack of attention can lead to dam failure, which means it is *not* optional maintenance. Agencies facing this delicate work also face high price tags and a lack of experienced contractors.

After decades of experience installing and rehabilitating relief wells beside earthen dams, geotechnical engineers with Vicksburg District have become experts in this specialized and often high-risk field. Recently, their efforts saved taxpayers more than half a million dollars by replacing six existing wells with eight new ones at the Corps' Grenada Lake outlet structure, increasing the dam's pressure relief capability by about 800 percent.

Their capability, developed through years of geotechnical experience, grew out of necessity.

At Grenada Lake in north Mississippi, the outlet structure and downstream channel are founded on Basic City Shale, underlain by high-pressure Meridian sand. Without relief, high uplift pressures could cause heave of the outlet channel, producing a hole that would threaten the structure and be very difficult to control.

The original relief wells installed during construction in 1950 were replaced in 1971. The second set of wells began to clog in 1986. Since 1994, the rehab frequency had increased from three years to annually. In the spring of 1998, the efficiency of the wells dropped significantly, with only slight benefit from rehab efforts. The only recourse was replacement.

"We have three projects within Vicksburg District that are a half-century old with around 100 pressure relief wells along the toe of each dam to control seepage," said Ken Klaus, chief of the district's Technical Investigation Group. "We had to develop special equipment and technical skills for rehabilitating and replacing these wells."

Replacing relief wells was not the most challenging issue faced at Grenada Lake. To provide the required relief, the discharge pipes had to be installed horizontally through the four-foot-thick concrete wing wall, and connected to the wells 25 feet below the surface of the backfill.

This work required accurate alignment of the pipe and a 25-foot-deep excavation to allow access for a welder. Excavation into the saturated sand backfill normally requires substantial brace work, along with a method of dewatering to prevent cave in.

Unique non-braced excavation installed the lateral pipes that carry water from the relief wells through the structure's wing walls into the Yalobusha River.

"I believe this is the first time this method has been used by the Corps and, as far as I know, only the second time it's been done anywhere else," Klaus said. "During construction it would have been easy but, with a full lake, you are dealing with the seepage forces and the constant concern that goes with drilling along the toe of a large dam.

"We're one of the few government agencies that has a reverse-flow drilling rig that can drill the 32-inch hole required for the relief wells at the Grenada job," said Eric Woerner, the Grenada rehab project geologist and engineering coordinator.

Most drilling rigs pump water *down* the drill pipe, forcing the cuttings out of the hole. The Corps' modified Failing Model 1500 reverse-flow rig has a pump that *vacuums* the cuttings out of the hole.

Woerner said that a 60-inch surface casing 12 feet long was installed next to the completed well using



Steel casings serve as a manhole for a welder to work underground while the relief wells are installed. (Photo courtesy of Vicksburg District)



A reverse-flow drill rig is needed to drill the 32-inch hole required for relief wells. (Photo courtesy of Vicksburg District)

a track hoe. Next, a 15-foot length of 56-inch steel casing was advanced inside the 60-inch casing using a 48-inch flight auger. This casing served as a manhole to allow access for a welder to connect the eight-inch horizontal discharge lateral through the four-foot-thick concrete walls of the stilling basin, allowing direct flow from the relief wells.

"So to get the welder down 25 feet to the joint where the lateral pipe meets the well, we had to put in this temporary manhole slotted to fit over the discharge pipe," said Woerner. "Instead of digging out a large area behind the wing wall that would have required a lot of brace work for a 25-foot-deep excavation and possibly weakening the outlet structure, we used this method. We figured it out with a team effort, largely by brainstorming." The team included in-house engineers, drill crews, and

Grenada personnel.

The "manhole" was removed after the welding and is stored on-site at Grenada for future use.

"This was not a standard project," Woerner said. "It was funded as a short-fuse requirement due to the old wells rapid decline," Woerner said. "And we needed to work when the lake was low."

They saved costs and valuable time by using the resourcefulness and expertise of each team member. The team provided all design parameters, purchased necessary materials, provided on-site technical supervision, drilled and installed the wells, and installed the lateral pipes and the dewatering system.

The Grenada Lake Field Office provided equipment and operators, assistance with the subcontractors, fuel, some materials, general safety monitoring, and monitoring for the dewatering system.

Contractors core-drilled the relief holes through the four-foot-thick wing wall for the lateral discharge pipe, and provided the welders, labor support, and built special mud boxes used during the drilling.

The project had eight 14-inch stainless steel relief wells, 120 feet deep. These wells replaced six existing wells that had been in service about 20 years.

The well-fouling culprit is a form of bacteria that feeds on the natural iron found in the groundwater throughout the Mississippi valley. "The bacteria produce a slime by-product that clogs the wells," Klaus said. The team rehabs the wells every couple of years to kill the bacteria and keep the wells operating efficiently.

"We're constantly trying to improve the efficiency of our rehabilitation techniques and equipment," Klaus said. "We realize that clogging of the wells is a never-ending problem because the groundwater contains both iron and the bacteria. We have to rehab...and so does everyone else."

The new rehab techniques extended the service life of the second set of relief wells at Grenada by about seven years more than original wells installed when the structure was built a half century ago.

"Any construction worker can drill a hole in concrete or wood, but you would probably prefer a dentist drilling in your mouth," Klaus said. "It's the same way next to a dam. You want a professional with experience in high-risk areas who understands the pressures that he may come up against."



These photos show the difference that turbine venting can make in the amount of air in the water below a dam. (Photos courtesy of Wilmington District)

Turbine venting improves water quality

By Penny Schmitt
Wilmington District

Far below the deck of John H. Kerr Dam, dark green water boiled downstream. "There it is!" someone said. A host of white bubbles filled the water, turning it to a milky foam that spread out downstream of the dam toward Lake Gaston on the Roanoke River.

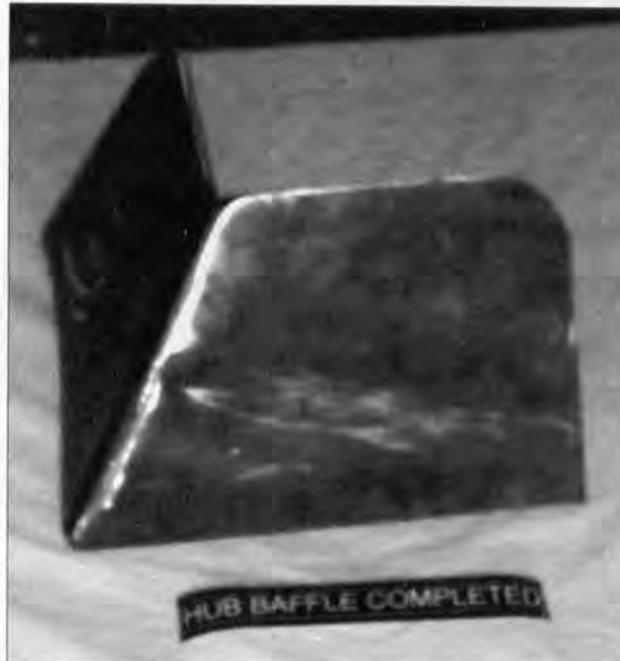
The white water gave visible proof that a recent retrofit (turbine venting) improves water quality and habitat for fish.

Baffles. In turbine venting, a set of baffles pulls in and mixes air with water that is whirling through a turbine at up to 36,000 gallons per second. "Results at Tennessee Valley Authority (TVA) facilities show that turbine venting can add one to three milligrams per liter of dissolved oxygen," said Joe Tanner, Operations Manager at Kerr Dam. "Early testing results show that we're getting even greater benefits, in the range of 3.3 milligrams per liter. Our plan is to vent five more turbines before next summer."

"We're working to improve water quality on many fronts in North Carolina," said John Morris, Director of Water Resources for North Carolina. "We're delighted that the Corps has been proactive in finding a way to improve water quality in Lake Gaston, and making conditions better for fish and wildlife."

What's the big deal about such a tiny amount of dissolved oxygen? In this case, a little means a lot. In the summer, dissolved oxygen levels in water downstream of the Kerr Dam sometimes gets lower than is needed to support a healthy ecosystem. When oxygen gets low, all but the most tolerant fish species leave the upper reaches of Lake Gaston to find favorable conditions downstream.

Fishing improves. "Reservoir tailwaters can be some of the most productive recreational fisheries resources available to the public," said Bud LaRoche, Regional Fisheries Manager for the Virginia Department of Game and Inland Fisheries. "The Kerr Dam tailwater is a very popular fishing area during the spring and early summer. However, during late summer and early fall, angling opportunities have been greatly reduced due to low dissolved oxygen levels. We applaud the Corps for taking these steps to improve water quality in the tailwater and upper reaches of Lake Gaston. The angling community should benefit greatly from this initiative."



The baffle that mixes air with the water is a small modification to the existing turbine blade. (Photo courtesy of Wilmington District)

Fish common to the tailwaters in good times include striped bass, largemouth bass, walleye, bream, crappie, and catfish.

Beginning last summer, the Corps worked with the Department of Water Resources and other interested North Carolina, Virginia, and federal agencies, the Virginia Power Company, and North Carolina State University to investigate other ways to improve oxygen levels. A 1995 TVA report on turbine venting convinced the Corps to consult with TVA to see if these procedures could work at John H. Kerr.

Yes we can. "We saw no reason why we couldn't repeat TVA's success," Tanner said. "This is a modification that could be accomplished within the Corps' current operating budget. We want to be able to say 'Yes, we can do something,' when our partners and neighboring communities ask for help. We're glad we found a way that we could take action."

To initiate the project, Tanner called on TVA's Jim Carter. "This is a procedure that only works on some turbines," Carter said. "The turbines at Kerr are Francis turbines, and can be effectively retrofitted." Carter assisted the Kerr staff with pre-testing, design, installation of the first project, and post-test-

ing. He trained Kerr staff so that they will be able to refit five more turbines next summer.

Total cost of the project will be about \$150,000. "This year's effort cost \$109,000," said Tanner. "We expect to be able to refit next year at a cost of between \$5,000 and \$7,000 per turbine, using our in-house work force."

"This isn't the first Corps of Engineers dam I've worked on," Carter said. "We've also been doing a similar project at Hartwell Lake in Savannah District. We've seen a lot of success at our own facilities and at others, when conditions are right. I encourage any facility that is looking to improve dissolved oxygen levels to determine whether this method will work for them."

"Turbine venting is the most economical and simple measure that can be taken to add oxygen to the river," said Chuck Wilson, a biologist in Wilmington District. "It's the logical first thing to try."

Wilson explained the conditions turbine venting will help alleviate. "During the hot months, deep lakes develop thermal stratification," he said. Simply put, that means there are stable heat differences between the top layer of the lake exposed to hot summer sun, and the coolest bottom layer of the lake.

Layering. When this layering occurs, warm water on the surface does not mix with the cooler bottom water. "Decomposing plant and animal material and microscopic plankton living in the bottom waters cause this layer to become 'anoxic,' that is, without oxygen," Wilson said. "Thermal stratification is a natural process in deep water lakes, and is not a problem with the Kerr Reservoir. However, because the intakes are in the bottom layer, when water is drawn through the dam to operate the turbines and generators, the bottom layer goes first. Turbine venting pulls air into this water, adding needed oxygen for the fish that live downstream in Lake Gaston."

"Now that we know the first turbine vented at Kerr Dam shows favorable results, our staff will modify all the remaining large-size turbines at the dam," Tanner said.

A winner. "This is a winning project for everyone," Morris said. "With the Corps' help, we can improve water quality on the Roanoke River and Lake Gaston. Our fisheries will improve, people visiting North Carolina and our sister state, Virginia, will find better outdoor recreation opportunities, and all this has been done at the lowest possible cost to taxpayers."

Focus on Headquarters



Corps of Engineers' top layer plans for the future and oversees policy

(Editor's note: Each month during fiscal year 2000, the "Engineer Update" will highlight a different sub-element of the Corps. This month we begin this feature with an overview of Headquarters.)

Executive Office

"The mission of the Executive Office is to command and control the Corps' assets so that USACE can effectively and responsively execute its missions. This is similar to the executive element of any Army major command (MACOM)," said Col. Timothy Sanford, Executive Officer of the Chief of Engineers. "One of the most significant things Lt. Gen. Ballard has done is to turn the Executive Office into an organization that can truly lead and manage the MACOM and add value to mission execution."

"Establishing a general officer Chief of Staff, adding a Secretary of the General Staff, and creating a Security, Plans, and Operations Office have focused the energies of the Headquarters and the command," Sanford continued. "An executive level Congressional Affairs Office concerned with all MACOM congressional issues, and an Interagency and Intergovernmental Affairs Office to focus command outreach to other agencies and potential customers, have enabled the Corps to be significantly more effective than when independent and largely uncoordinated stovepipes worked these issues."

"Finally, establishing a Commander's Planning Group that is constantly evaluating opportunities and allowing the commander to seize them has maximized the valuable and limited time of the Chief," Sanford concluded. "Lt. Gen. Ballard has built an effective Executive Office from existing Headquarters resources that focuses energy and effort, keeps the command aligned with the Corps' Vision, and closely mirrors other Army MACOMs."

The Executive Office has 40 people divided into several sections.

Command Group: The Command Group encompasses the Commanding General and his executive officer, secretary, and aide. It also includes the command sergeant major (CSM) and the Commanders Planning Group (CPG). The CSM looks after the needs and issues of enlisted soldiers throughout the Corps. The CPG looks ahead at the Chief's schedule to insure no opportunities to work Corps issues are missed, and assists the Chief in preparing for meetings so that his efforts are maximized.

Deputy Commanding General (DCG): The DCG is second in command of the Corps. He also

wears a second hat as the Chief of Staff with responsibility for coordinating and managing the Headquarters staff. He relies on two deputies, one for support and one for operations, to help him execute his Chief of Staff duties. The Office of Congressional Liaison and the Office of Interagency and Intergovernmental Affairs Support also answer directly to the DCG.

Deputy Chief of Staff for Operations (DCS-O): The DCS-O is a colonel who works directly for the

Chief of Staff. He oversees the Headquarters staff elements responsible for the Corps' primary missions — Civil Works, Military Programs, Principal Assistant Responsible for Contracting, Research and Development, and others. He also supervises the Secretary of the General Staff and the Protocol Office.

The DCS-O is dual-hatted as the head of the Security, Plans, and Operations (SPO) Office. In this capacity, he is the Crisis Management Team Chief and oversees the 249th Engineer Battalion (Prime Power).

Deputy Chief of Staff for Support (DCS-S): The DCS-S is a GS-15 who works

directly for the Chief of Staff. She oversees the Headquarters staff elements oriented toward support functions — Resource Management, Information Management, Safety, Public Affairs Office, Office of the Chief Council, Equal Employment Opportunity, the Humphreys Engineer Center Support Activity, and others.

Office of Congressional Affairs (OCA): This office coordinates all Corps interactions with Congress, including congressional staffs. OCA advises the commander on congressional contacts and monitors all congressional actions to ensure we are aware of and respond to any which impact the Corps and its missions.

Interagency and Intergovernmental Affairs Office: This office focuses on outreach and the USACE Support for Others Program. It leads the identification of potential new Corps customers and establishes account executives to coordinate the interface with these customers. Current outreach has focused on Indian nations and tribes, the Immigration and Naturalization Service, African nations, the State Department, and other federal agencies such as USAID.

Office of the Chief of Engineers

The Office of the Chief of Engineers (OCE) is DA's focal point for military engineer activities, and advises and assists the Chief of Engineers in executing his Army staff responsibilities.

OCE is currently located in room 1E530 of the Pentagon, where the Chief of Engineers maintains an of-

fice for conducting business when he is in the building. The OCE is authorized a staff of 17 people (10 military and seven civilian), including the Chief of Engineers and a GS-15.

The OCE is divided into five branches:

Military Operations Branch: This is the DA Staff Engineer representative for the Crisis Action Team and Crisis Response Cell. This branch provides current operations input and support to the Army Operations Center (AOC), and liaison between the Corps and the Director of Military Support for domestic disasters. They work with other military offices and commands on all aspects of military engineering. They also help develop the Civil Engineer Support Plan to the Joint Operation Planning and Execution System.

Army Plans Branch: This is the primary point of contact for all long-range planning with the Deputy Chief of Staff for Operations and the Joint Staff. They help develop Army and defense directives, joint exercises, and engineer doctrine.

Topography and Space Branch: This branch is the primary point of contact to the DA staff for topographic issues, and provides Geospatial Information and Services (GI&S) advice and assistance to DA staff. They are DA's point of contact for commercial imagery, and advise and assist in its acquisition and use. Branch personnel also coordinate the DA GI&S program with the Corps and its labs.

International Affairs Branch: This branch coordinates international engineer issues with other military and federal offices, and educates them about the Corps' capabilities.

Programs Integration Branch: This branch synchronizes engineer participation in key Army processes such as material acquisition and the Planning, Programming, Budgeting, and Execution System. They coordinate military engineer organization and material acquisition actions with DA staff, and lead Army efforts in Joint Engineer Interoperability.

Office of the Deputy Commanding General for Military Programs

Military Programs has four divisions — Engineering and Construction, Programs Management, Environmental, and Installation Support. There is also a Special Missions Office, and two centers — Engineering and Support Center at Huntsville, Ala., and Transatlantic Programs Center at Winchester, Va.

This office provides engineering, construction, and environmental management services for the Army, Air Force, other assigned U.S. government agencies, and foreign governments as requested. To accomplish that mission, the DCGMP exercises its authorities through seven Corps divisions and 20 districts.

The FY99 military budget for Military Programs exceeds \$7.3 billion. Of that, about \$1.6 billion represents construction of new Army facilities. About \$1.2 billion supports facility acquisition for other defense agencies. Through agreements with host nations in the Far East and Europe, Military Programs will oversee providing another \$1.1 billion worth of facilities for our armed forces overseas. The rest is work for



Col. Robert Slusar, Deputy Chief of Staff for Operations (left), and Maj. Gen. Russell Fuhrman, Deputy Commanding General and Chief of Staff, work during their weekly scheduling meeting. (Photo by F.T. Eyre)



Lisele Okojie (left) and Jean McGunn go over a blueprint in Military Programs. (Photo by F.T. Eyre)

the Air Force, environmental operations to support DoD, foreign military sales, and other initiatives.

The FY99 budget contains many projects and initiatives, including building barracks, dormitories, and family housing for the Army and Air Force; Pentagon renovation; and building chemical demilitarization facilities. Among other things, the office will support base operations, Installation Support Offices, and the Base Realignment and Closure Program, and clean up and restore former defense sites.

Military Programs supports military operations as well. In Bosnia and Kosovo, Corps civilian volunteers provide real estate, engineering, and environmental services.

Office of the Deputy Commanding General for Civil Works

This office oversees the Corps' civil works program, which has an annual budget of \$4 billion. Civil works programs involve the planning, design, construction management, operation and maintenance of water resources projects. They meet the nation's flood and storm damage reduction, navigation, environmental restoration, hydropower, recreation, and other water-related needs. Funds for this program are provided through annual Energy and Water Development Appropriation Acts, and through contributions from non-federal entities for planning or building specific projects as prescribed by law.

This office oversees the Corp's emergency response mission, the regulatory mission in the nation's waterways and wetlands, and engineering and construction activities that USACE performs for other federal agencies.

The office also responds to congressional inquiries, assists the Office of Management and Budget in preparing the President's annual budget proposal for the Corps, and helps other agencies use the Corps' expertise to address their engineering and water resources problems.

Assistant Chief of Staff for Logistics

This office oversees the Corps' logistics policies, programs, services, and automated systems. Their primary missions are supplies and equipment, equipment maintenance, transportation and travel, logistics support for emergencies, and facility management. During the past few years, they have concentrated on revolutionizing logistics effectiveness.

A major focus is accountability of the Corps' nearly \$2 billion of equipment and more than \$100 million

of supplies and material. They are currently fielding an upgrade to the Corps' automated property book system that uses Web-based technology and an Oracle database to integrate the system with CEFMS. They have also led a Corps-wide effort using CEFMS to account for supplies and material.

In equipment maintenance management, the office proposes that the Corps adopt Facilities and Equipment Management (FEM), a DoD system that uses commercial software to manage maintenance activities, repair parts, scheduling, forecasting, analysis, and work planning. FEM will be integrated with CEFMS.

The facility management mission focuses on cost-effective use of office space. They monitor compliance with federal and Army space regulations and give Corps commanders policy guidance and advice on cutting costs by reducing office space to the minimum needed. Their MACOM engineer also advises district commanders on moves.

One of the office's most important efforts is support of emergency response and disaster relief. The logistics emergency response program manager leads interagency workgroups and teams supporting FEMA in developing critical concepts and improvements. He also develops policies, concepts, processes, and procedures for the Logistics Emergency Response Team. The LERT are volunteers from across the Corps, trained and ready to give logistics support during emergencies and disasters.

The office provides transportation and traffic management (which includes managing the Corps' non-tactical vehicle fleet and policy oversight for temporary duty travel), and policy direction for the Corps in both normal operations and emergency response.

Office of the Deputy Chief of Staff for Research and Development

This office provides policy, oversight, and advocacy for Corps research and development activities. The director is also the principal technology advisor to the Chief of Engineers. The office is relatively small, having in Headquarters two military officers and 12 civilians. Three more military positions (the Program Integration Office), are at the laboratory sites.

In the past, this office just managed the laboratories. This role changed with the formation of the U.S. Army Engineer Research and Development Center (ERDC), which integrates the Corps' laboratories into a single command. The DCSR&D now has the same staff role as other directorate leaders, and reports to the Deputy Commanding General.

Total funding for ERDC is about \$450 million, with about half coming from direct sources. The districts are the principal reimbursable customers.

There are more than 2,100 people in the ERDC located principally at the four labs. There are also small field offices in Fairbanks, Alaska, and on the Outer Banks of North Carolina.

Office of the Deputy Chief of Staff for Real Estate

This office manages the full range of real estate services (appraisal, planning and control, acquisition, management, and disposal of land) for the military and civil works activities of the Army and Air Force, and for other federal agencies as requested.

They also manage the Contingency Real Estate Support Team (CREST), which is made up of real



Todd Waldman (left) and Darvin Smith study contracts in Real Estate. (Photo by F.T. Eyre)

estate personnel who have received modified military training so they can deploy to provide real estate services during contingency operations. CREST also assists during national emergencies when needed.

Real Estate is also the DoD executive agent for the Recruiting Facilities Program, the Homeowners Assistance Program, and the Defense National Relocation Program.

Office of the Deputy Chief of Staff for Corporate Information

This office is the Corps' computer and automation expert. The staff establishes policies and procedures that help Corps offices acquire and manage information technology. They ensure that the Corps' information technology systems integrate with federal, DoD, and Army systems.

They assess the information technology requirements and systems of Headquarters and subordinate commands and, if necessary, advise the Chief of Engineers to modify or terminate information technology programs. They also make sure that the Corps' information technology requirements are consistent with DoD's Joint Technical Architecture.

Office of the Deputy Chief of Staff, Resource Management

The Office of the Deputy Chief of Staff, Resource Management (DCSRM) is the Chief of Engineers' central data source for making resource-related (manpower or dollar) decisions. DCSR is also the Chief of Engineers' eyes and ears for fiscal integrity.

The DCSR ensures that sound manpower and financial systems, policies and processes are in place to reach the best resource-related corporate decisions.

The Deputy Chief of Staff for Resource Management is also the command's Chief Financial Officer. He establishes the Corps' corporate financial structure, and insures compliance with the Chief Financial Officer's Act of 1990. His major tools for executing these roles are a dedicated staff and the Corps of Engineers Financial Management System.

Office of the Principal Assistant Responsible for Contracting (PARC)

The PARC oversees and administers contracting for the Corps to assure compliance with federal, DoD, and Army procurement policies and procedures. To execute this mission, PARC develops and recommends contracting instructions, policies, and procedures; provides PARC policy guidance and training for Corps formal source selections; reviews and recommends approval for justification and approval documents, determinations and findings, acquisitions plans, and waivers; and reviews and prepares responses to all protests.

The PARC also conducts field reviews of all Corps procuring activities, analyzes and recommends remedial actions for audits pertaining to contracting, and responds to Congressional and other inquiries on acquisition issues. The PARC also serves as the Corps' Acquisition Career Program manager.

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(Clockwise from top left) Maj. Tom Sroka, Germaine Hofbauer, Tina Jackson, and Kathy Garriety work on a Hurricane Floyd briefing in Civil Works' Emergency Operations Center. (Photo by F.T. Eyre)

Interview with the Chief

Ballard discusses business changes, future prospects, Army support

Article by Becki Dobyns
Photos by F.T. Eyre
Headquarters

Editor's note: Every year, Lt. Gen. Joe N. Ballard, the Chief of Engineers, gives the "Engineer Update" a review of the past year and looks ahead to the coming year. Ballard is now completing his third year of command.)

Update: During the past year, what do you think was the Corps' greatest success?

Ballard: Divisions as Business Centers (DBC). I think this is the most significant change we've made in the Corps. We used to have 41 business centers—the districts. And they were all different. Now we have eight, with more consistent management.

But to appreciate the full scope of the change to Divisions as Business Centers, you must consider the factors involved. For the DBC concept to work, it meant changing the way we approached project management (PM), fiscal controls, selecting the best people for jobs, and other cultural changes. If you roll them under the Division as a Business Center, that really changed the way we do business. All these things are now integrated.

Another big success during the past year has been the Corps' support to the Army. Our initiative to serve the Army and be more relevant to Army leadership is coming to fruition. We've seen it come to bear in our support to Bosnia and Kosovo, in our close work with the Army Reserves and National Guard, and even in our support to installations.

For example, let's compare installation support last year and this year. Last year, we did a little less than \$1.5 billion in installation support for the entire year. Through our initiative of reaching out and putting project management forward to support installations, we surpassed all of last year by the time we were about

halfway through this year's second quarter. That's a tremendous success! Directors of Public Works and installation commanders are now coming to us. They're coming back to the Corps and I'm very happy about that.

Update: What's been our greatest challenge during the past year?

Ballard: Number one was getting the business center concept understood. We managed to change the business process, but the challenge was getting folks to understand what we meant by a business center. In order to make the concept work, we had to evolve from a stovepipe organization. That was very difficult. You're talking about changing culture here. In the past, we worked civil works and military programs as independent business functions. We never thought about integrating those business functions, and we never thought about how they complement each other. They *do* complement each other, and we are now integrating many of the processes.

The other challenge is complacency. Remember last year I said what I really wanted to see was commitment? Well, I think we now understand commitment. Now our biggest challenge is to bring on the last 20-some percent who still don't want to believe. I don't think we can afford to leave anyone behind. We need everyone to be part of the team. That's still one of the biggest challenges we face.

Update: What do you want to accomplish during the next year?

Ballard: This coming year, I really want to nail down a couple of things. First, I want to institutionalize the Regional Management Board (RMB). This goes to the heart of the Divisions as a Business Center concept. And, as a part of that, I think we must firm up the PM process. Is it working? Yes. But, is it working as well it should? No. We still have some

tweaking to do. I want to leave command feeling good about the RMB and the PM process.

There are some other things we've started that I don't expect we'll complete during my command. But I want to get the dialog going and get us focused on several of these areas now. One of these is Operations and Maintenance. We have an obligation to the nation and the Army to take care of the infrastructure—hydroelectric facilities, locks and dams, navigational structures, flood control structures—that is part of our portfolio, to make sure they stay in operation, are maintained, and fulfill their purpose.

For example, we have the responsibility for those who live below a dam to make sure they're not in harm's way. Right now, I'd think one of the safest places in America is below a Corps dam. I want to make sure that continues to be the case.

However, dam safety inspections are costly, but must be done. Because of fiscal constraints, boat ramps are deteriorating, recreational sites are not being kept up to standard, locks and other key facilities are not in the best of condition. We need to fix them up. We must make the case to Congress for an increase in funding. However, we can't make the case until we know where our money is going. Do we have the work correctly prioritized? Where is the need? How bad is it? What things can we do ourselves? Then and only then can we specifically quantify what we need from Congress.

The other initiative that folks have heard about are changes to the CMR (Command Management Review). We'll probably rename it, but what's important is coming up with a set of standards that clearly articulate where we need to put command attention and our resources. The old CMR told me what we didn't do yesterday. It didn't tell us what we need to do today or tomorrow. At the Headquarters level, we should be looking toward the future. So the CMR must be strategic rather than historic.

We did pretty well on the first try in August at the Senior Leaders Conference. We learned this was clearly the right direction, but we need some fine-tuning. I want folks to be able to come to the CMR and for it to be okay for them to say, for whatever reason, "Hey, I didn't achieve this objective." Then we can flow to them whatever help is required and not beat them up.

Update: How fully do you feel the vision is integrated into the Corps culture?

Ballard: I think about the answer to that question by considering three levels. At the senior level—general officers, SES, colonels, GM-15s and some 14s—we're beginning to make the vision a reality. I believe they understand it; they're beginning to think strategically and long-range.

There's a layer in the middle—mostly some 14s and 13s—who are still trying to figure out what it all means. This group feels that they have the most to lose if significant changes are involved. So, naturally, there is some entrenched resistance.

The third and largest group in the Corps—up through most GS-12s—are clamoring for change.

They like the vision. They want to be a part of it. They don't see the vision as breaking something they spent 30 years to make. To them, it's not a threat.

I think the next generation of Corps leaders is very enthusiastic about the changes we've made. The vision has taught folks a new definition of change. Change is not adapting to this Chief then waiting for a new Chief to come in so you can change again. Change is continuous. What this vision says is that we are now a flexible, more agile organization, and we are responsive to those things that drive the change process—demands from our customers, changes in resources, new markets, and more.

Update: Can you tell me about your recent trip to Africa? What results do you expect?

Ballard: Africa turned out to be a rewarding trip. I was invited by country teams from the embassies in the Ivory Coast, Ghana, and South Africa.

I'd given a speech at the National Summit on Africa about a year ago. In the speech I said that if many of these developing countries didn't have a Corps of Engineers, they needed one. In America's early days, the Corps of Engineers built infrastructure and thus created wealth and opportunities for growth. I said that as the external threats to many of these countries diminish, why not take some of the resources of a large standing army and create a Corps of Engineers? Start with simple things like building roads and irrigation ditches.

I'm very optimistic that we will see some work generated from this trip. We've received letters from the governments of two of those countries through the State Department requesting assistance from the Corps in several areas, so I just think there's more to come.

Update: How is the Corps doing with outreach to new customers?

Ballard: Wonderfully. I prefer the term "outreach" to "marketing" because we care about who we do business with. We don't want to partner with just anyone. So we've reached out to organizations and customers we want to get involved with, such as DC schools, African nations, Department of Energy, and Department of Transportation, to name a few. Some were traditional customers we lost, but we've gone back and repackaged our message and many of our old relationships are beginning to come around.

We're beginning to see quite a bit of new work, so much that we finally convinced the Army to approve a new SES position for business development and strategic functions, to be filled in the next five to six months. Private sector businesses have offices with similar missions.

Update: What would you say was the single most important thing to come out of the Senior Leaders Conference (SLC) this year?

Ballard: It was the clear sense for the first time in three years that the senior leadership in the Corps of Engineers is now functioning at the strategic level. Right where they should be. They understand each other; they're beginning to pull together. They're focused on the same goals and objectives. They're planning for the future of the organization. And from what I see of the senior leaders and the emerging leaders, I think the future of the Corps is in very good hands.

Update: Last year you talked about additional necessary restructuring and downsizing. Where do we stand on those issues?

Ballard: A year-and-a-half ago we were having RIFs (reductions in force), several RIFs a week it seemed, throughout the Corps. Well, we finally stabilized the work force. We're not having major RIFs on a regular basis, and where we've made organizational changes such as with the Center for Public Works, we've moved employees and taken care of them. No one lost their job when they were willing to relocate or move to another position.

So, for now, we're finished downsizing. But the problem is in the Headquarters where we're organized around the color of money. And if you stop and think about it, that doesn't make sense.

Think of the Corps of Engineers as three organizations at three levels, which it really is—the districts and field offices as the first level, the divisions as the second, and the Headquarters. So, we put project and program management in place, which helps break down the stovepipes in the district and got things running smoother. We developed the Division as a Business Center, enabling great connectivity from the district to the division.

The problem is from the division up. They're plugging into Headquarters, an organization that's a relic of the past. So now we need some necessary Headquarters restructuring. Restructuring, *not* downsizing. We're *not* getting rid of jobs. We're realigning jobs to increase efficiency and productivity. We're restructuring around business functions instead of stovepipes.

Update: Do you think the Army leadership is recognizing USACE as a relevant part of the total force?

Ballard: Yes. But the Army hasn't changed; we have changed. Gen. Jack Keane, the new Vice Chief of Staff of the Army, had been in his position two weeks. The second staff visit he made was to the Corps of Engineers. And when I said, "Why us?" He said, "If we're going to work on quality of life for soldiers, family housing, the environment, and recruiting, then I've got to get an understanding of the Corps of Engineers and how you function."

Now, that's unprecedented. The Army's number two person recognizes that the Corps plays an important part in the day-to-day affairs of the Army. It's because of our numerous efforts—the environmental clean-up associated with Base Realignment and Closure, the Chemical Demilitarization program, family housing, and the Capital Ventures Initiatives and the Residential Communities Initiatives programs, along with our re-engagement in Pentagon forums. Army leaders now have a better understanding of the Corps of Engineers. They understand how important we are and, because of the changes in the culture in the Corps, they now see us as willing partners.

Update: USACE has deployed quite a few people

to support U.S. operations in Kosovo. How has our approach to these types of missions in support of a Commander in Chief (CINC) changed?

Ballard: Normally, when the CINCs put their plans together, they seldom came to us. Maj. Gen. (Gerald) Sinn (Commander of North Atlantic Division, with responsibility for Corps work in Europe) and his folks monitored the Kosovo situation and, like any good proactive organization, didn't wait for the CINC to realize a shortfall in capability. We talked to the CINC and to DA and to the Joint Chiefs of Staff. We presented the CINC with four options—everything from real estate and contingency planning, all the way up to full-scale rebuilding of the nation.

We showed how we could contribute across a full spectrum, from peacekeeping missions all the way up to nation building. It was well received, giving us the opportunity to show we wanted to be full partners in supporting Army missions. The lesson for the Corps is that we need to be this proactive with all our customers.

Update: Are you concerned that the progress that's been made under the vision will be lost with the next Chief of Engineers?

Ballard: The next Chief is *not* going to turn the clock back. He might slow the momentum down. He might fine-tune some of the changes, but he's *not* going to turn it back. You can't put the pieces and structure back in place. How are you going to put the stovepipes back? We've had three years of project management. We've changed job descriptions. We've changed the selection process.

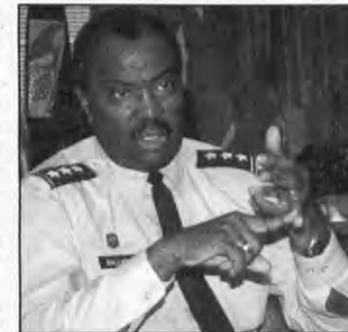
But here's the key thing we did *not* change, and the next Chief doesn't have any control over—the folks who pay the bills, the customer. Customers are coming back because they understand we've changed. They didn't believe it before. Now they do. They know we can be more agile. They know that we can be cheaper and still deliver the best value. Are we suddenly going to break all that? I think not.

At the SLC, I reminded my senior leaders about an old cartoon strip called "Pogo," which I read as a kid. Pogo once said, "We have met the enemy, and he is us." I think we recognize now that we were never under attack by outside forces. We were a victim of our own complacency, our own shortsightedness, and our own inefficiency.

All we did was to create the sense of urgency. It doesn't matter how powerful the people think the Chief is, or how powerful the Chief thinks he is, there is no way we could have changed the organization if people didn't believe, deep down in their hearts, that we really needed some change. I could have dictated, but to an organization 226 years old, four years is a blip. The reason all this change happened is people realizing we really needed it. I just delivered a message. They bought in on it.

Update: Finally, as you came on board as Chief, you said you had a goal to fish in all 383 Corps lakes. How many have you fished in so far?

Ballard: Three. You want to know why? Because in the last three years, I've had so much more fun being in the Corps, that my leisure time went from fishing to other things. I've got a lot of time left in my life to fish in Corps lakes, but in the past three years I've had bigger fish to catch in other places.



"The challenge was getting folks to understand what we meant by a business center."



"From what I see of the senior leaders and the emerging leaders, I think the future of the Corps is in very good hands."



"The reason all this change happened is people realizing we really needed it. I just delivered a message. They bought in on it."

Focus on Headquarters

Continued from page seven

Deputy Chief of Staff for Human Resources

This office is responsible for human resources (HR) management, and assists the Chief of Engineers in directing the Corps' HR program. The office plans and develops policy and programs, and evaluates human relations management, including employment, position management, classification and compensation, labor and employee relations, HR development, career program operations, senior executive service, and military personnel.

The office has four divisions — Development Division (including the Professional Development Support Center in Huntsville, Ala.), the Employment and Compensation Management Division, the Career Programs Operations Division, and the Military Personnel Man-

agement Division.

This office also manages the annual Senior Leadership and Emerging Leaders Conferences; the Corps' corporate recruitment program, awards program, intern allocations, long-term training, and executive development.

The office also manages central recruitment for engineer and scientist interns, and supports a partnership council with three national maritime unions. The Chief of Engineers has Department of Army-wide responsibility for the Engineers and Scientist Career Program, and the DCSHR helps him manage it.



Beryl Dixon (left), Judy Rogers, and Julalee Sullivan go over records in Human Resources. (Photo by F.T. Eyre)

Office of Small Business

The Office of Small Business leads and supervises the Corps' Small Business Program, which governs the Corps' relations with small businesses, small disadvantaged businesses, minority-owned businesses, and woman-owned businesses.

The office ensures that those businesses have the opportunity to compete effectively for Corps contracts, and provide training and counseling to help them succeed. This increases the Corps' base of service providers, and helps strengthen the industrial base of the U.S. As a result, the Corps averages nearly 40 percent of all

contracts to small businesses, and 11 percent to small disadvantaged businesses.

Public Affairs Office

The Public Affairs Office develops and implements strategies to tell the USACE story to numerous and varied audiences — the general public, Congress, DoD, Army, customers, partners, news media, and others. The Chief of Public Affairs, a senior Army colonel, is the principal advisor to the commander, command group, and senior staff about communications issues for USACE national and international programs.

The public affairs program is divided into two main areas, public information/media relations and command information/electronic media. Public information focuses on telling the USACE story to outside audiences through various tools including news releases, interviews, media events, and contact with various public, trade and professional organizations. This program also monitors and analyzes media/public trends, and develops strategies and plans to effectively communicate USACE missions.

Command information tells the USACE story to the Corps, Army, and DoD team. A major tool for the command information program is the monthly *Engineer Update*, the largest Army-funded newspaper, with a circulation of 35,000. The command information team also works with the Office of Corporate Information to develop USACE Internet policy, and develop and maintain the USACE Internet web site.

Continued on next page

Unique battalion works for Headquarters

By Bernard Tate
Headquarters

Few Army units deserve the word "unique," but the 249th Engineer Battalion (Prime Power) has earned it. They are the *only*:

- Prime power unit in the Army.
- Army unit under the command of the Chief of Engineers.
- Battalion which runs a joint-service school that qualifies soldiers and sailors in a Military Occupational Speciality.
- Battalion with both global responsibilities and forward deployment.

The battalion fills an important gap in the Army's electric power generating capability.

"The Army has tactical generators which you can tow behind a truck to power a field site," said Maj. Kathleen Jennings, Operations Officer. "Then you've got commercial power that runs through lines along any road. Between those two kinds of power there's a big gap, and we have generators that fill that gap."

Each platoon in the battalion is equipped with four 750 kilowatt (kw) generators, one 500 kw generator, and one 500 kilovolt-ampere substation. In addition, the battalion's Loan Program, which contains the Army's strategic reserves, has 13 4.5 megawatt generators, three 1,500 kw generators, along with five 500 kw and 33 750 kw generators.

The 249th has soldiers permanently stationed from one side of the globe to the other. The battalion headquarters and staff, the Prime Power School, loan program, and heavy maintenance sec-



Two 249th soldiers work on a generator. (Photo courtesy of the 249th Engineer Battalion)

tion are all at Fort Belvoir, Va. A Company, headquartered at Fort Lewis, Wash., has two platoons at Fort Lewis, one platoon at Scholfield Barracks, Hawaii, and a platoon at Camp Humphries in Korea. B Company and three platoons are headquartered at Fort Bragg, N.C., with a fourth platoon in Heidelberg, Germany.

"Today we have soldiers spread out in 14 time zones," Jennings said. "We have soldiers in the Ukraine, and we've got people in Africa and at Soto Cano Air Base in Central America."

The mission of the 249th's soldiers is to deploy worldwide to generate and distribute prime electrical power to support warfighting, stability and support operations, and disaster relief.

Their deployments and disaster re-

liefs operations reads like a roster of recent headline-making events, including hurricanes Georges and Mitch, the New England ice storm, the Dakota floods, super-typhoon Paka, and Operations Uphold Democracy, Provide Comfort, Joint Endeavor, and Joint Guard/Forge.

"During this time of the year, we're very involved working with any disasters that come along to support the Federal Emergency Management Agency under the Federal Response Plan," said Jennings. "And when there are no disasters, we do a variety of training to prepare for disaster support and worldwide missions."

The battalion runs the U.S. Army Prime Power School to train soldiers to operate the generators and other equipment they use during these missions.

"We have the Department of Defense school for training all prime power soldiers and sailors," said Jennings. "To become a 52E, a Prime Power Specialist, they first must complete an initial enlistment, because we want people who already know how to be good soldiers. Then they take a battery of math, science, and mechanical exams, and must have a General Aptitude Test score of 110 or above to be eligible for the Prime Power School."

The training is 52 weeks long. It is broken up into three phases — academic, where the soldiers take mechanical and electrical fundamentals, math and science courses; hands-on operator training where they learn to operate the generators and associated equipment; and finally speciality training for training as either electricians, instrument specialists, or mechanical repairmen.

"The generators are interesting, but the soldiers are our real asset," Jennings continued. "We're a small unit with less than 200 soldiers. It takes very intelligent individuals to go out and work in two-man teams or four-man teams with foreign nations and with joint command authorities to get the job done. Although they know how to maintain and operate the equipment, the thing they're *really* best at is analyzing and fixing problems, whether it's big equipment, small equipment, temporary structures, or fixed facilities. Our soldiers are just incredibly intelligent."

"Our soldiers are proud, prepared, and possess a can-do attitude," Jennings concluded. "We stand ready to serve the U.S. Army Corps of Engineers, the entire Army, and the nation."

Continued from previous page

Office of Chief Counsel

The Office of the Chief Counsel provides a full range of legal services to support USACE, and oversees the legal services system throughout the Corps. The office has four practice groups — Procurement Law and Contract Disputes; Legislation, Fiscal, and General Law; Environmental Restoration, Regulation, and Compliance Law; and Litigation and Administrative Disputes. (Ethics Counselor responsibilities reside in the Chief Counsel's executive office.) These practice groups cover many legal areas, and serve all Corps elements with legal advice, representation, and other legal services.

The Chief Counsel is the legal advisor to the Chief of Engineers, and the senior legal officer for the Corps. He establishes legal policy and precedent for the entire Corps and manages its legal services system. The Chief Counsel oversees all attorneys in the Corps, which includes approving their qualifications, evaluating their performance, and assuring that they meet applicable standards of conduct.

The Chief Counsel's Office routinely interacts with public and private entities, principally the Army Secretariat, the Office of the Judge Advocate General, the Department of Justice, the General Accounting Office, Congress, state and local governmental bodies, contractors, special interest groups, and the private bar.

Safety and Occupational Health Office

This office serves the Chief of Engineers and his commanders, Corps employees, and missions by providing policy, oversight, and strong advocacy for safety and occupational health. This encompasses safety management, safety engineering, industrial hygiene, health physics, occupational health, and workers' compensation cost containment.

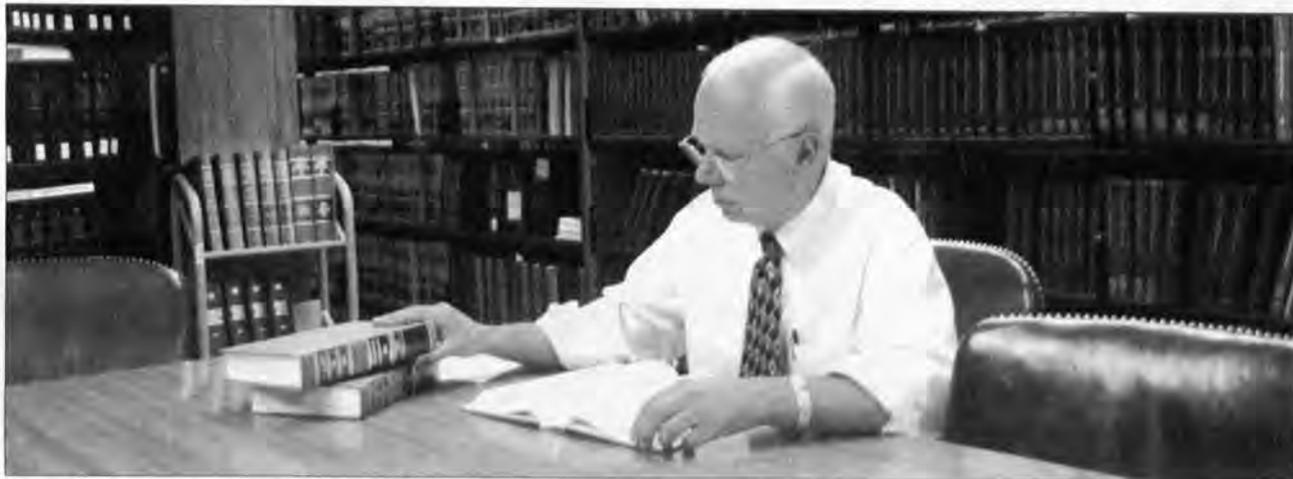
The staff develops policies intended to prevent accidents and occupational illnesses to Corps employees and contractors, as well as to promote the safety of the public visiting Corps recreational sites. They focus on integrating safety, occupational health, and risk management into the life cycle of all Corps missions.

Equal Employment Opportunity Office

This office manages and directs the Corps' Equal Employment Opportunity (EEO) and Affirmative Employment Program, and serves as principal advisor to the Chief of Engineers on EEO in the Corps' mission. The staff manages the EEO complaints processing system to ensure compliance with regulatory requirements. They also monitor and assess the climate of Corps activities to ensure that the management of civilians complies with EEO/affirmative employment principals and requirements.

EEO program goals include developing a work environment free of unlawful discrimination, a workplace that reflects our nation's diversity, and developing EEO professionals who are experts in their field.

The Corps' EEO office develops and evaluates policy, and issues directives and guidance about affirmative employment plans and programs. The staff develops policy for Special Emphasis Programs; conducts program analysis and advises on trends that have an impact on EEO; conducts special studies; promotes complaint resolution through early intervention by managers and increased use of the Corps of Engineers



Ken Powers, Ethics Counselor, does research in the Office of Counsel's law library. (Photo by F.T. Eyre)

Early Resolution Program. They also monitor trends and analyze the complaints filed in the Corps.

Engineer Inspector General's Office

The Corps of Engineers Inspector General's (CEIG) office is the eyes, ears, voice, and conscience of the Corps commander. The Engineer Inspector General answers directly to the Chief of Engineers on all IG matters, and will support the division and district commanders on request by conducting sensing sessions and other activities.

The CEIG has an authorized strength of 21 people organized into three divisions — Plans and Operations (which handles long-range planning and daily office operations), Assistance and Investigations, and

Inspections Division.

The Assistance and Investigations (A&I) Division takes action on complaints, assists individuals, and conducts investigations and inquiries into particular situations. A&I Division resolves more than 200 cases annually, spanning numerous subject areas from assisting in civilian personnel issues to inquiring into improper contract procedures.

A&I Division also addresses fraud, waste, and abuse cases, and

manages the Chief's Hotline. Employees are encouraged to use normal channels to resolve issues or concerns, but they may seek help by calling the Chief's Hotline or the A&I Division. Inspectors general will take precautions to protect confidentiality, and can act on any complaint submitted anonymously.

Inspections Division (ID) inspects areas of concern as directed by the Chief of Engineers. ID conducts two to four major inspections annually. During these inspections, a team will travel throughout the Corps to evaluate the compliance of various activities to specific standards. After each inspection, the Chief of Engineers is briefed on the findings and recommendations, and a report is published. While on location, the Inspection Team is available to all Corps personnel to resolve issues or take complaints. If an issue can not be resolved immediately, the Inspection Team will hand-off the case to A&I Division for resolution.

Internal Review

Internal Review (IR) reviews Corps processes, operations, and goals, and provides professional audit advice to all levels of Headquarters management. The office serves as a business process appraiser, consultant, and adviser. The auditors' duties include audits of known or potential problem areas; following up audit recommendations to ensure they are implemented;

coordinating with external auditors; managing the Corps' civil works contract audit program; advising and consulting on current and planned management controls; validating outsource studies and cost estimates involving 65 or fewer positions; performing contingency operation internal audit support; providing Army Internal Review program management and policy to subordinate commands; and reviewing the major command Internal Review programs.

Office of History

This office supports and supervises the historical functions of Headquarters related to the combat engineering, military construction, civil works, and work for others missions of the Corps. The office has seven historians, one museum curator, one technical editor, and an administrative officer. It is in the Kingman Building at the Humphreys Engineer Center on Fort Belvoir, Va.

The chief historian is the principal historical advisor to the Chief of Engineers. He supervises the historical activities of Headquarters and oversees the historical programs of the Corps' subordinate elements. He also directs the research and writing of engineer historical publications and studies; oversees field and oral history programs; manages staff support, reference services, and research collections; publishes historical volumes; and directs museum activities.

The office maintains a research collection of visual, printed, and documentary information. The collection includes biographies; materials relating to the civil works and military construction programs; speeches; slides, photographs, and videotapes; maps; personal papers; engineer unit histories; oral history interviews; and rare books.

Researchers may use the materials by appointment. The office also maintains a collection of artifacts including uniforms, unit insignia, paintings, and military equipment. Planning is underway to establish a USACE museum at Fort Belvoir.

Ongoing projects by staff and contractors include a two-volume history of the Corps; a 50th anniversary oral history of Army engineers in the Korean War; a history of the Corps in the District of Columbia; and a history of dam technology, working with the National Park Service and the Bureau of Reclamation.

Humphreys Engineer Center Support Activity

HECSA is responsible for the daily operations to support of Humphreys Engineer Center tenants, human resources functions for the Transatlantic Programs Center, and for all administrative and operational functions of USACE Headquarters.

HECSA's operational responsibilities in the National Capital Region include legal services (including the Corps' Intellectual Property Programs), security, safety and occupational health, information management, logistics management, contracting, resource management, human resources, and equal employment opportunity. HECSA's authorized strength is 178, and that staff supports more than 2,100 Corps employees in the National Capitol Region.



Connie DeWitte, Chief of the Safety Office, charts the Corps' safety program. (Photo by F.T. Eyre)

The Dirty Dozen

All-woman, all-Corps team helps build Habitat for Humanity home

Article and Photo
By Kim Gillespie
Huntsville Engineering and
Support Center

Twelve women from the U.S. Army Engineering and Support Center, Huntsville, participated in a recent Habitat for Humanity "building blitz," a 10-day effort to build three houses for families in Huntsville, Ala. The 12 women, who all work for the center's Ordnance and Explosives Directorate, volunteered to help build the "women-built" house for the Elizabeth Keith family. Working alongside Keith and a mostly female construction crew, the Corps women used their skills to frame the 1,000-square-foot house.

The group credited their participation to Patti Berry, a project manager for the Ordnance and Explosives Design Center. Berry participated in last year's first "women-built" house, and thought it would be a great idea to ask her female co-workers to participate in this year's event.

"The women were recruited through word-of-mouth," said Berry. "I just mentioned it to some of the women I work with and they mentioned it to some of the women they work with. Volunteers were willing to take vacation time (annual leave) since the Hab-

itat kick-off day was on a Friday."

Berry views this effort as a good team building exercise. "It's an opportunity to interact with each other outside of the regular office environment while contributing to a good cause in the community," she said.

Becky Breeding, a civil engineer, was the other returning veteran from last year's build. Her enthusiasm for helping others and her experience with the original Habitat program in Americus, Ga. (where she met former President Jimmy Carter) gave her the incentive for joining this year. "It's just a great thing to do and a lot of fun," said Breeding.

Millie Reed, a program assistant for the Ordnance Directorate's Center of Expertise, also brought enthusiasm and skill to the group. Decked out in her Corps hard-hat, Corps T-shirt and construction boots, Reed demonstrated her skill with a hammer to her co-workers. "I surprised my mother-in-law by building some closet shelves by myself," said Reed. "I've just always done a lot of work around the house."

Valerie Clinkenbeard, a civil engineer and technical manager who is currently building her own home with her husband, found herself operating a circular saw for the group. "It's just like being at home," she said.

Sherry Anderson-Hudgins, also an



(Clockwise from bottom left) Carol Youkey, Valerie Clinkenbeard, Suzanne Murdock, and Millie Reed team up to help build the Habitat for Humanity house for the Elizabeth Keith family.

ordnance project manager, brought more than six years of construction industry experience with her, but found herself working the same jobs as the other first-timers which included Brenda Hatley, Kim Gillespie, Anne McCauley, Suzanne Murdock, Kellie Williams, and Carol Youkey.

While structural engineer Michelle Crull claimed to have the shortest construction stint in Corps history ("half-

a-day," she said), she was out there with the rest of the team lifting and hammering.

By the end of the day, the hot and tired "Dirty Dozen" had completed mounting the insulation on the exterior, and manually hoisting all of the home's roofing trusses.

Berry summarized the group's feelings, "We just hope Elizabeth and her family are happy here."

Transatlantic aids Russian orphanage

By Julie Shoemaker
Transatlantic Programs Center

To many, a major benefit of working for the U.S. Army Corps of Engineers is the opportunity for travel — often to far-flung locations with deeper cultural submersion than any tourist visa would allow. John Linderman is one such beneficiary, but acknowledges that some of what he's seen is heartbreaking.

As a Transatlantic Programs Center (TAC) project manager on the Russian fissile material storage fa-

cility under construction near Oziorsk, Linderman traveled to Russia several times on temporary duty. His trips, sometimes up to six weeks, gave him a first-hand view of Russian culture, including the sadness experienced by young Russian orphans.

Linderman first met the orphans during a trip in 1998 when employees from Bechtel National Inc. (BNI), contracted by the Corps to help build the storage facility, took Linderman to the orphanage. The orphanage director, Nina Malkova, gave the group a tour and discussed the many problems her orphan-

age faced in current Russia.

"In the U.S., the perception of foster care and orphanages has changed considerably in the past 20 to 30 years," said Linderman. "But it hasn't changed in Russia. All needy children are housed in one building, out of sight somewhere."

The orphanage in Kyshtym is a drab two-story building, 'home' to about 30 children, 4 to 17 years old. The children are divided into groups by age and sex. Many of them come from dysfunctional homes with alcoholic, drug-addicted, abusive, neglectful, or apathetic parents who leave their children to beg for bread from neighbors. Other parents have serious health problems affecting their children's welfare. The children all remain at the orphanage until they turn 18 years old or find a job.

"Through our visits and discussions with Ms. Malkova and her staff, we've seen and heard some very moving stories," said Linderman. "The orphanage is not receiving enough money to keep the facility running, provide essential medicines, or adequate food to maintain good nutrition. As any parent knows, when one child gets an illness it quickly spreads throughout the household. The facility doctor told us how difficult it is when anyone gets sick. It spreads and becomes serious quickly. The staff, who are not well off themselves, bring food from their own homes to help feed the children."

Linderman pointed out that, because of the Russian financial crisis, the only governmental assistance the orphanage has received in more than two years is coal for heat. "The coal is then bartered for food," he said. "Everything else, like clothing, furniture, and supplies, must be donated, or they do without."

Last year, the Bechtel/Corps team was spurred into



Contributions from Transatlantic Programs Center help these children in an orphanage in Kyshtym, Russia. Nina Malkova, orphanage director, is at far left. (Photo by John Linderman)

Continued on next page

Corps cleans up Alaska salt water marsh

Article by Marie Darling
Photo by Mike Walsh
CRREL

To clean up widespread white phosphorus contamination at Eagle River Flats, a salt water marsh on Fort Richardson, Alaska, the U.S. Army Corps of Engineers is working in a joint effort with the U.S. Army Alaska, the Alaska National Guard, and the Alaska Department of Public Works (DPW) to implement a new and innovative remediation strategy.

Eagle River Flats covers 2,165 acres and has been the primary ordnance impact area for Fort Richardson for about 50 years. But it is also an important staging ground for waterfowl during spring and fall migrations.

In the early 1980s, an unusually high number of waterfowl carcasses were found. Investigations during a six-year period indicated up to several thousand waterfowl a year were dying of unknown causes. Bill Gosweiller, Chief of Environmental Resources in the Fort Richardson Department of Public Works, raised concerns that the flats may be contaminated. He initiated the investigative process and was responsible for the logistics and early fieldwork performed at the Flats.

The conclusions from a 1989 study by a private contractor indicated that residues from munitions might be causing the waterfowl mortality. Because of the Cold Regions Research Engineering Laboratory's expertise in analyzing munitions residues in Alaska, the Army asked CRREL to investigate what chemicals in the marsh could be killing the waterfowl.

Under Dr. Charles Racine, a field team of an ecologist, a chemical engineer, and a geologist collected and analyzed more than 200 sediment samples from ponds where ducks were observed feeding and subsequently dying. They identified white phosphorus residue from smoke munitions as the cause of the waterfowl mortalities.

According to Charles Collins, CRREL's Eagle River Flats Scientific Coordinator, "The saturated salt marsh sediments of the flats were contaminated by the incomplete burning of white phosphorus following detonation of smoke-producing munitions. Waterfowl feeding in the contaminated sediment then became poisoned by ingesting particles of white phosphorus."

Collins also said that Eagle River Flats is the first Army training area identified with white phosphorus contamination. Before the findings at the salt water marsh, residue from white phosphorus munitions was thought to be nonpersistent in the environment.

In 1991 the Army stopped firing white phosphorus into Eagle River Flats to reduce waterfowl mortality; but bits of dangerous phosphorus remain. To remediate the contamination, CRREL engineers developed a unique remote pumping system. Pumping is less damaging than dredging, which was tried and was of limited success when considering the ecological effects.

To ready the work area, soldiers conducted field exercises with explosives in 1997 to create sumps for the pumps in the pond areas of the Flats. While placing a pump in a pond may seem a simple exercise, it took a lot of preparation, according to Maj. Michael Meeks. He explained that before the pump could be installed, the area first had to be cleared of unexploded ordnance. His soldiers then created the sump by detonating two 40-pound shaped charges and two 40-pound cratering charges.

In these sumps helicopter crews and Pathfinders (Army scout soldiers) placed 2,000 gallon-per-minute water pumps to divert the water to other parts of the Flats. Once the water is removed, the pond is allowed to dry, exposing the white phosphorus contami-



Soldiers place explosives to create sumps in Eagle River Flats.

nated sediments to the air, which causes the white phosphorus to dissipate.

Michael Walsh, a mechanical engineer with CRREL, said, "This procedure was a way to drain the ponds without permanently changing the environment, and the habitat can be restored after the treatment."

Estimates by the engineers indicate that the treated area will recover within three to five years.

The recovery is ongoing. A first-year study indicates an 85 percent reduction of white phosphorus in the surface sediments.

With the treatment strategy implemented, the five-year plan will continue. Additional pumps will be deployed, increasing drainage of contaminated areas. Concurrently, annual assessment reports of the efficacy of the treatment program will be filed, with the possible treatment of additional areas and monitor-

ing the overall situation at the Flats.

According to Walsh, "Our expectations are that Eagle River Flats will be substantially decontaminated within the five-year plan."

Not just the waterfowl benefit from this clean-up. Soldiers get training with live explosives. Soldiers and engineers were assisted by Huey and Blackhawk helicopters and crew to transport personnel and water pumps and generators to remote areas of the marsh. The helicopter crews also assisted in placing the equipment and charges.

For more information on this unique project, please contact Michael Walsh at (603) 646-4363 or e-mail: mwalsh@crrel.usace.army.mil (fax at 603-646-4720). A videotape about this remediation effort (#T98013) is available by interlibrary loan from the CRREL Library at (603) 646-4779, or by e-mail to erhoff@crrel.usace.army.mil.

Orphanage

Continued from previous page

action with an immediate desire to help the orphanage. With money collected, the team purchased and delivered more than \$300 worth of critical medicines. Team members, energized by their good works, agreed to go back to their organizations and seek further assistance in obtaining a much-needed piece of medical equipment used for treating respiratory inflammatory ailments, costing about \$1,500.

The team was successful. "This area in Russia has polluted, poor air quality which causes many respiratory problems," said Linderman. "This piece of medical equipment addresses those problems."

The team's efforts have grown. Although it is a Bechtel/Corps initiative, many others touched by the Russian situation have contributed. Generosity has also been extended from the Russian site project management office staff and several local churches.

"Recently, some members of the U.S. House of Representatives visited our site and were impressed with how the office is succeeding in showing the goodwill and generosity of Americans," said Linderman.

On his last return trip to Russia, Linderman added more than \$800 to the pot of money for the orphanage. "We hold the money at the site and when a needed item is identified, we purchase it for the orphanage," he said. "One time, Ms. Malkova told me that many of the children were desperate for shoes

and asked if some of the money could be used that way. Since our group philosophy is to provide the children with whatever is most critical with the resources we've collected, we bought shoes."

Since last April, the collected money has been used to send four children to summer camp, and to purchase shoes and school supplies. The two organizations have continued to help the orphanage through donations of money, clothing, and time.

"One important fact to remember is money problems in Russia continue to get worse," said Linderman. "It's common knowledge that less assistance, not more, can be expected from the Russians. The average Russian can barely support himself, much less give to others. It comes down to us, concerned people who want to make this world a better place. What we take for granted — food, clothing and everyday services — the Russian orphans are desperate for."

"We, the TAC/BNI team, have established a good system and use 100 percent of every dollar contributed for the orphans," Linderman said. "When needed, we purchase and deliver the items."

Linderman, slated to return to Russia this month, thanked the Employees Activities Association at TAC for their efforts in coordinating contributions. "I realize that we can't save the whole world," he said. "But when it comes to these kids, maybe we can at least make a difference in their little corner of it."

'Essayons' one of the biggest and best

By Alexander Kufel
Pacific Ocean Division

Among the cruise ships, pleasure boats, sailboats, and Coast Guard vessels in Honolulu harbor, the dredge *Essayons* stands out like an arc welder in a kitchen. The dredge deployed to Hawaii for five weeks to clear harbor sedimentation throughout the state.

The *Essayons* is one of the U.S. Army Corps of Engineers' four hopper dredges. The 350-foot-long vessel is an imposing ship and one clearly built with a purpose. Painted in spartan tones of black and red iron oxide paint, with apparatus jutting out of the main deck, there is an industrial power about the *Essayons* that speaks volumes about the work it was designed to do.

"We can pick up 600 dumptruck loads of sand from the ocean floor in an hour and carry it to the dumpsite, then turn around and go back for more," said 2nd Mate Jeffrey Woodward. Built in 1983 for \$100 million, the *Essayons* has 70 miles of hydraulic lines.

Going back for more is what it does best.

"She doesn't pretend to be a pretty ship, and she's so robust that some accuse her of being grossly overbuilt," said Woodward. "But we're the fire department. The *Essayons* is who they call when no one else can do the job."

Dredged material is suctioned from the harbor bottom through two 94-foot dragarms and deposited into hopper bins in the vessel's midsection. When the bins are full, the *Essayons* sails to an ocean disposal site approved by the Environmental Protection Agency three to five miles offshore. There it drops its load of dredged material through large hopper doors under the ship.

Honolulu's South Oahu ocean disposal site is about three miles away from Honolulu Harbor. Because the ship is picking up sediment from one area and displacing it to another, pollution is not an issue. What may look like pollution to an observer is actu-



The *Essayons* isn't beautiful, but it's rugged and capable. (Photo courtesy of Portland District)

ally sediment suspended in the water because it's too light to immediately sink. Trash and other large items are screened out and saved for normal disposal.

It costs \$75,000 a day and takes a 20-person crew to operate the dredge. Because of the costs involved, dredging is a 24-hour a day proposition. Two crews alternate 10-hour work tours of eight days on and six days off when they are close to home. They extend that to a two-week cycle when they are further away, such as in Hawaii. Nyberg said that cycling the schedule allows them to concentrate on the work while on-duty, then have a block of time off afterward. Both crews are full-time Corps employees.

While the *Essayons* was dredging Honolulu Harbor, clearing sedimentation that could make the harbor inaccessible if left unchecked, it held several open houses for the public. Nearly 200 Hawaii-based Corps employees turned out to tour the ship.

The *Essayons* performed maintenance dredging in Kahului, Honolulu, Barbers Point, Nawiliwili and Port Allen commercial harbors to restore these deep-draft harbors to their federal authorized depths.

The *Essayons*' home port is Portland, Ore., where the ship helps maintain the entrance bars, rivers, and harbors on the coasts of Oregon, California, Alaska, and Hawaii.

'MV Mississippi' is largest towboat in U.S.

By Kathy Rea
Huntington District

The musical "Showboat" captured some of the excitement that steamboats could bring when they visited isolated frontier towns during the last century.

Even today, a visit by a big riverboat can cause a stir, as the *MV (Motor Vessel) Mississippi*, flagship of the U.S. Army Corps of Engineers, proved recently. The sun shone and Dixieland music filled the air at Harris Riverfront Park in Huntington, W. Va., and about 200 people toured the five-deck towboat and saw first-hand how federal funds are used to maintain a vital waterway. The *MV Mississippi* was in Huntington as part of an Outreach Tour hosted by the Great Lakes and Ohio River Division.

The first *Mississippi*, a steamboat, was built for the Mississippi River Commission (MRC) in 1882. It conducted spring and fall inspection trips from St. Louis to New Orleans. Today's *MV Mississippi*, built in 1993 by Halter Marine, is the fifth towboat to bear the name. It is the biggest diesel towboat in the U.S., 241 feet long and 58 feet wide with 6,300 horsepower.

The *MV Mississippi* is also a passenger boat. It has 22 staterooms and can accommodate 150 passengers. The conference room seats 115 people and is used for public meetings, commission and congressional meetings. Its dining room seats 85.

Today's *MV Mississippi* spends more than 90 percent of its time as a working towboat for Memphis District moving barges, equipment, and supplies on the Mississippi River. But it also still serves as an inspection and workboat for the MRC, and as a giant floating ambassador for the Corps of Engineers, like



The *MV Mississippi* is an impressive sight on the river. (Photo courtesy of Huntington District)

it did as it visited Huntington.

Capt. John Dugger is in charge of the 38-person Memphis-based crew (14 permanent crew and 24 seasonal). While in Huntington, the crew went grocery shopping and spent more than \$1,600 at a local supermarket. This may sound like a lot, but those supplies will last only three or four days.

Dugger has worked for the Corps for 33 years and has captained the *MV Mississippi* since its launch in 1993. He said he enjoys working on the river and has been doing so since he was 16 years old. "I feel as though I'm part of the river community," he said.

The Outreach Tour was conducted as part of the Ohio River Mainstem study. The study is looking into a new lock extension project at Greenup Locks and Dam. The first stop on the tour was at Paducah,

Ky.. Other stops included Louisville, Ky., Cincinnati, Ohio, and Mount Vernon, Ind. During the Louisville tour, the *MV Mississippi* participated in the groundbreaking ceremony for the new 1,200-foot lock at McAlpine Lock and Dam.

In Huntington, visitors came on board and enjoyed information booths covering such topics as navigation, flood control, the environment, and Huntington District history.

In addition, invited guests, district personnel, and several retirees boarded the *MV Mississippi* at Huntington and rode down the Ohio River to Greenup Lock and Dam. During the four-hour trip, the guests enjoyed lunch and had an opportunity to hear briefings on how federal funds are used to maintain the Ohio River and the Ohio River Basin.

Around the Corps

Taiwan earthquake

A field reconnaissance team from the Research and Development Center went to Taiwan Sept. 25 to Oct. 4 to study the Taiwan earthquake. The team was composed of earthquake engineering experts from the Geotechnical, Structures, and Construction Engineering Research Laboratories.

They gathered information on how dams, navigation and port facilities, and other structures reacted to the earthquake. This data will be used to design structures which are more earthquake resistant.

The research team was led by Dr. Mary Ellen Hynes. Other team members were Dr. Richard Olsen, geotechnical engineer; Dr. Ellis Krinitzsky, senior research seismologist; Dr. Mostafiz Chowdhury, research structural engineer, and Dr. Ghassam Al-Chaar, research structural engineer.

Korea contracts

In August 1998, torrential rains hit Korea, flooding several U.S. military installations. Among the hardest-hit were Camps Casey, Hovey, and Red Cloud north of Seoul. In the past year, Far East District has designed and awarded contracts which are part of the recovery supplemental appropriation Congress passed after the flooding.

On Sept. 16, the last of the flood recovery MCA construction contracts were awarded. The recovery program includes barracks, four administrative facilities, a community service center, a battalion dispensary, three director of public of public works shops, a division school, two education centers, three libraries, and two fire stations. Work on many contracts are ongoing and all work is expected to be completed in 2001.

Inmate workers

Recently 12 inmates with bush-axes, rakes, and pitchforks began clearing overgrown brush from the tailrace at Falls Lake in Wilmington District. Tom Freeman, park manager, estimated that contracting out the work would cost about \$4,000. The crew from the North Carolina Department of Corrections, working under North Carolina's Community Work Program, cost the Corps nothing.

The Falls Lake Tailrace is the most popular site at the falls, receiving about 225,000 visitors last year. Recent visitors said they were pleased to see the inmates giving back to the community and complimented the success of the clean-up.

Partnership

Seven South Carolina State University (SCSU) students worked in Charleston District this summer in a partnership between SCSU and the Corps. Last March District Engineer Lt. Col. Robert Rowlette and SCSU President Leroy Davis signed the memorandum of agreement (MOA) and a cooperative education agreement (CEA).

The MOA established a summer hire program that offers jobs for SCSU students from May through August. The CEA, which starts this fall, will give SCSU students at least two positions for the 1999-2000 school year. Besides offering positions to students, Corps members will teach seminars and classes at SCSU.

SCSU is a historically black university in Orangeburg S.C. It has about 5,000 students and ranks fifth in producing black students with degrees in mathematics and the sciences.

No lie!

Savannah District completed construction on the Department of Defense Polygraph Institute (DoDPI) under budget, and brought the project in more than a month ahead of schedule. The dedication and rib-

bon-cutting for the new facility took place at Fort Jackson, S.C., on July 14.

"The design and construction of this facility was a high priority since the beneficial occupancy date could not be delayed," said Lt. Col. David Bender, Deputy District Commander. "Relocation of the training institute from Fort McClellan, Ala., meant any delay would be a major impact to the soldiers and civilians assigned to the school." Fort McClellan closed Sept. 30 due to a Base Realignment and Closure decision.

DoDPI familiarizes criminal investigators with polygraph (lie detector) methodology. Each year it trains more than 600 federal employees from 22 agencies and all branches of the military. This facility is the last BRAC project to be built at Fort Jackson. The 10,282-square-foot, two-story building contains classrooms, training and research suites, support operations spaces, offices, and a library.

Governor's award

Elaine Johnson, Chief of Albuquerque District's Construction Contracts Section, recently received New Mexico's Annual Governor's Award for Outstanding New Mexico Women. Johnson was one of only 30 women chosen for the award. Winners are selected based on community involvement, leadership in their profession, and implementation of positive change.

Johnson's community service includes being a choir parent and co-manager of the Albuquerque Boys Choir, volunteer activities for the Scouts, judging science fairs at area schools, volunteer work for Inez Science and Technology Magnet School, belonging to the district's Federal Women's Program, chairing the Women on the Move committee, and teaching Sunday School.

Correction

Ben Borda is incorrectly identified as Mike Borda on page 15 of the July *Engineer Update*.

Army Knowledge Online

In a few months, authorized users will be a mouse-click away from the Army's internal website. When established, Army Knowledge Online (AKO), the Army's Intranet, will give active-duty and reserve soldiers, Department of the Army civilians, retirees, and other authorized users a secure, computer-accessed ability to communicate worldwide, and access to a storehouse of information, according to AKO Program Manager Maj. Charles Wells.

Currently undergoing testing, AKO was developed by the Army's Strategic and Advanced Computing Center in the Pentagon. The vast majority of AKO content, said Wells, is servicemember-specific, linked to worldwide Army command webpages. Authorized users will be able to log-on and electronically "surf" for information, such as quality-of-life at future duty stations to include local attractions, cost-of living and schools. It will also contain a plethora of other information including weather, travel, service news, and a combination address/phone book/yellow pages directory for soldiers and other authorized users. (*From the Army News Service.*)

Visitor center opens

After years of planning and development, the William B. Hoyt II Visitor Center at Mount Morris Dam opened on June 18.

Mount Morris Dam on the Genesee River is the largest dry dam in the east. It operates exclusively for flood control and retains no permanent reservoir. By tracking rainfall and snow melt patterns, the Water Control Section of Buffalo District retains and releases water through the dam to control river flow and minimize flood damages. About 80 percent of the time, the river simply flows through the dam.

The 5,400-square foot Visitor Center has a vestibule, a large atrium with several regional and seasonal displays, a museum of exhibits, a multi-purpose room for films or meetings, two bathrooms with a composting toilet system, and a future retail area.

The museum's exhibits include a timeline depicting early flood events on the Genesee River, the dam's construction, its place in the natural landscape, and its operation and effectiveness. The museum contains several interactive displays that emphasize the features and benefits of the dam, and a "Kids' Corner" where children can explore and learn.

Already attracting visitors from at least a dozen states and from as far away as Holland, Hungary, England, and Poland, the center is expected to draw about 100,000 visitors each year. Future plans for Mount Morris Dam and its Visitor Center include making recreation-based improvements to the landscape and setting up dam tours.

New Executive Director

Frank Finch, a former USACE officer, recently joined the South Florida Water Management District (SFWMD) as its new executive director. The SFWMD's Governing Board selected Finch as their new leader on June 10.

Finch commanded Baltimore District 1990-92 and Chicago District 1984-87. Finch also served as the Army's top environmental officer at the Pentagon.

"I'm thrilled, humbled, excited, and ready to get started," Finch said. "I'm looking forward to meeting with the members of the Governing Board, SFWMD staff, and the citizens of South Florida I'll help serve."

The SFWMD oversees flood-control, water-supply, water-quality, and environmental-enhancement projects in a 16-county area covering 17,000 square miles from Orlando to Key West. This includes more than 140 local governments with about six million people. SFWMD has 1,900 employees, and its fiscal year 1999 budget is \$472.6 million.

Vandenberg

"I thought it was a real learning experience. It was fun," said 17-year-old Sean Thomas, as he looked at the skeleton of the Western Range Operations Control Center (WROCC). "I got to see how things went together, all the things we've been learning about."

Thomas was one of 27 seniors in the advanced placement calculus class at St. Joseph's High School in Orcutt, Calif., a few miles from Vandenberg Air Force Base. These are bright kids, taking college-level mathematics in high school. They were visiting WROCC, a project managed by Los Angeles District at Vandenberg. Jim Mills arranged the trip. He is a construction representative with the district's Vandenberg Resident Office, and father of a sophomore at St. Joseph's. He thought the students would enjoy seeing how what they learned in class applied in the real world.

The WROCC, Space Command's top construction priority, is a good place to see it. When completed next February, the \$19.5 million control center will parallel the operations of NASA's Eastern Launch Range in Florida. The 118,000-square-foot facility will house the Operations Control Center for the Western Range missions of Department of Defense and civilian commercial space flights, missile tests and evaluation, and space-launch tracking.

The day before the students' field trip, Mills visited their classroom with technical drawings and the design analysis to show what they would see.

"We saw a lot of numbers on paper that didn't really mean much to us," said Gene Beltran. But then the students saw how those numbers translated from the plan to the construction. "I never realized how much work went into it or how complex it was," Philip Halbig said.



Tatjana Tessner plots Hurricane Floyd's coordinates on a map in the Savannah District Emergency Operations Center. (Photo by Jonas Jordan)



National Guardsmen prepare to load up emergency water supplies in Kinston, N.C. (Photo by Jonas Jordan)

Hurricane Floyd

Continued from page one

generators and sophisticated communications systems to coordinate relief operations.

Seven soldiers from the 249th Engineering Battalion (Prime Power) deployed to Fort Gillem on Sept. 15 to prepare 280 generators that FEMA has prepositioned in the Theater Logistics Center East. Capt. Michael Kunigonis, commander of the 249th's Headquarters and Headquarters Company, led the team. The generators, ranging in power from small tactical generators to 500 kilowatts, would have deployed to support FEMA requests for emergency power for key facilities such as hospitals, shelters, and water plants.

USACE personnel performed debris and structural damage assessments along the path of Hurricane Floyd to assist federal, state, and local planners in opening key routes, clearing roads, and protecting homes and businesses. Both satellite and on-scene reconnaissance was performed to focus relief efforts. Beach and shoreline erosion is also being studied.

In NAD, emergency staffs prepared for Hurricane Floyd by coordinating contracting for ice, water, debris removal, and other missions as directed by FEMA. New York District provided 10,000 sandbags to the New York City Department of Transportation for use in flooded areas; 10,000 sandbags for Orange County; and 5,000 sandbags to Nassau, Suffolk, and Rockland counties.

Jacksonville District

If Hurricane Floyd had struck Florida head-on, Jacksonville District would have been near ground zero. Col. Joe Miller, District Engineer, approved administrative leave Sept. 14-16 so district personnel could prepare for the storm. On Sept. 14, the district established an 800 hotline to keep personnel informed and allow them to report in.

The Emergency Operations Center (EOC) activated on Sept. 13 to monitor the storm round-the-clock. Personnel drove the district's command and control vehicle to Cecil Field Navy base as an alternate EOC in case the storm damaged the district EOC. District personnel also deployed to the state of Florida's EOC and the city of Jacksonville's EOC to coordinate with other state and federal emergency activities.

The Water Management and Meteorological Section also monitored the storm round-the-clock for potential impacts to Corps water structures, and



Hurricane Floyd caused the largest peace-time evacuation of the Florida and Georgia coasts. (Photo by Jonas Jordan)

coordinated project operations with field offices and local sponsors.

All district offices secured government property and vehicles. On Sept. 14, the Information and Logistics Management staff took steps to protect the district's property and supplies. The district's warehouse staff moved boxes of historical records and critical equipment from the warehouse to higher shelves at other locations. Crewmembers of the survey boat *Florida* secured their boat at the warehouse and monitored its safety during the storm.

After the storm danger passed on Sept. 16, Miller and other district personnel made three preliminary aerial damage assessment flights.

After the storm

As Hurricane Floyd (by then a tropical storm) passed over land, the rainfall in the Carolinas and up the eastern seaboard created record flooding in rivers throughout the region. USACE responded under both its own flood-fighting authority, and to missions assigned by FEMA.

By Sept. 20, Charleston and Wilmington districts had provided thousands of sandbags and sandbagging machines to local authorities to assist them in protecting important infrastructure. USACE personnel had been dispatched to Horry County, S.C., and 15 County Emergency Operations Centers in flood-affected areas of North Carolina. Greenville,

Washington, and Kinston, all in North Carolina, were substantially under water and cut off from the rest of the state by flooded roads. More than 400 roads were closed due to flooding, including I-95 north of Rocky Mount, N.C., and I-40 west of Benson, N.C. North Carolina reported 5,346 houses damaged and 784 destroyed.

In Conway, S.C., the Waccamaw River was rising toward a record crest and teams from Charleston District and throughout the Corps worked feverishly to protect local sewage treatment, water, and power facilities using sandbags and pumps.

Under FEMA missions, by Sept. 20 Wilmington District, with support from PRTs from MVD, was providing more than three million liters (about 750,000 gallons) of water and 960,000 pounds of ice to affected communities in North Carolina. Wilmington District was also poised to respond to potential missions for temporary housing and debris cleanup. Corps experts were fully engaged with state and county officials in providing technical assistance and information as they prepared to deploy mobile homes for thousands of families displaced by the floods.

One of the DTOCs from Mobile was set up in Wilmington to provide the operations headquarters for an Emergency Response and Recovery Office to respond to further FEMA taskings.

Vital role

USACE has a primary disaster preparedness and response role as part of the Federal Response Plan (FRP) administered by the Federal Emergency Management Agency. The FRP describes how the federal government mobilizes to assist states and territories cope with specific disasters. Under the plan, USACE is the primary Department of Defense organization for planning, preparedness, and response under Emergency Support Function (ESF) #3, which is Public Works and Engineering. There are 10 different ESF's within FEMA.

Activities within ESF #3 include emergency clearance of debris, restoration of critical public services and facilities, temporary supply of potable water and ice, temporary restoration of water-supply systems, structural evaluation of buildings, damage assessment, and technical assistance.

(Staff Sgt. Wayne Hall of the Fort Belvoir "Eagle," Christina Plunkett of Jacksonville District, and Rob Holland of South Atlantic Division all contributed to this article.)