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Corps tackles new mission in wake of Hurricane Fran

Article by G. Jeanne Hodge
Photo by Jonas Jordan
Savannah District

Hurricane Fran seemed intent on wrecking as many homes as possible as she made her way through North Carolina, uprooting trees and using them as battering rams against homes. She set in motion events that gave the Corps of Engineers its first-ever trees-off-houses mission.

As the lead agency for debris removal during federally declared disasters, the Corps had already been tasked by the Federal Emergency Management Agency (FEMA) to remove debris from public roads and streets, and to provide technical contracting assistance to state, county and city applicants eligible for public debris removal. These are traditional Corps disaster relief missions.

But on Sept. 11, North Carolina Governor Jim Hunt announced a major deployment of manpower and equipment to speed up debris removal and take trees off homes. FEMA authorized \$200 million for debris clearance and, with North Carolina officials, coordinated the Tree-Off-Houses mission.

Brig. Gen. R. L. VanAntwerp, South Atlantic Division Commander, pledged Corps support to the expanded mission.

About 20 Corps real estate specialists from eight districts were mobilized to support the mission. They executed rights-of-entry permits for contractors to go on private property to work, and worked with local government offices to identify disposal sites and obtain the rights-of-entry permits.

All of North Carolina's 100 counties were eligible for assistance under the Tree-Off-Houses program. Homeowners were eligible if:

- The home was the principal residence.

- The home was a single-family house, trailer, duplex or condominium (up to four units).

- The tree was leaning on or over the home, was blocking the main front or rear entrance, or posed a threat to safety or security.

- The homeowner signed a rights-of-entry permit, a hold-harmless agreement, and promised to reimburse the state for any disaster aid money or insurance proceeds for the tree removal.

By Oct. 26, Wilmington District's Emergency Management Office, which managed Corps participation, could report that trees had been removed from 1,959 homes, with 1,308 applications to be inspected and 957 rights-of-entry requests to be completed.

Corps contractors removed tree trunks and major branches and took them to the nearest road right-of-way for pickup. Cleanup was the homeowner's responsibility.

Five weeks after the disaster, the Tree-Off-Houses program was still receiving calls, and 37 tree removal services were still under Corps contract.

"We're moving as quickly as we can to remove trees that have fallen on homes, as well as trees that are leaning over homes," said Wilmington District's Mike Smith, project manager for the effort. "We can never go as fast as we'd like, but overall I have been pleased with the progress."

Besides the Tree-Off-Houses program, the Corps managed the removal and disposal of debris from rights-of-way and lent assistance to 46 counties. At one point nearly 1,000 Corps contractor trucks were rolling in North Carolina. Cleanup efforts continued at full speed for several



Workers remove a fallen tree from a trailer in Cary, N.C.

weeks with 100,000-125,000 cubic yards of debris collected daily by Corps contractors; and roughly 4,000-5,000 truckloads removed each day from rights-of-way.

While Corps contractors worked in the incorporated cities and townships along with hundreds of volunteers, National Guardsmen cleared debris from Wake County schools, and the North Carolina Department of Transportation worked in unincorporated areas.

'It feels so good to get a load off my back'

By G. Jeanne Hodge
Savannah District

Hurricane Fran terrorized a lot of families during her sweep through North Carolina, including the Lius of Raleigh.

"It was late at night," recalled Lillian Liu. "It was very dark in the house. No power. No lights. I was so afraid. I looked out the windows. I'd go this way and I'd go that way. . . ."

That pacing saved her life when her world, her home of three years, came crashing in.

Fran had picked up an 80-foot oak by its roots and dumped it on the Liu's home, wrecking the hall and family room. Five seconds earlier and Liu would have been in the hall, in the path of the oak.

"How lucky can I get," said Liu. "I'm thankful for my life."

The next day Liu and her husband, a retired professor at North Carolina State University, salvaged as much from the family room as they could. But beginning the cleanup and repair work would prove difficult since practically all the tree removal services were under contract to either the

Corps of Engineers or the utility companies.

"I was afraid the roof could not take so much weight for so long," said Liu, who was referred to company after company. Finally, the Federal Emergency Management Agency set up the Tree-Off-Houses Program and publicized a number which Liu called often.

"I think Mrs. Liu called me about 20 times," recalled Wilmington District's Mike Smith, project manager for the statewide Tree-Off-Houses Program. "She was obviously distraught about her situation, and I could tell from the information she gave me that this was no run-of-the-mill tree on her house."

"Mr. Smith was so caring and sympathetic," said Liu. "I just kept calling him to help me. I know he got tired of my calls."

But Liu's persistence paid off, because she was the first resident to be helped by the Corps under the Tree-Off-Houses program.

A crew from AAA Stewart Professional Tree Service Company of Marietta, Ga., arrived at the Liu's home on Sept. 14 at 6:10 p.m. With the crew came Smith; Paul Allen, a real estate specialist

with Savannah District who secured rights-of-entry and hold harmless agreements; Mary Lou Maltzberger, a park ranger at Thurmond Lake, responsible for assuring the quality of the operation; and Wilmington District's Bob Cagle, North Carolina Area Engineer for Hurricane Fran.

According to Smith, the tree was more than five feet in diameter, about 200 years old, and weighed at least 20,000 lbs. Expert climbers, ropemen, groundmen and a crane operator worked three hours straight to remove the branches from the roof. Before leaving for the night they also covered the roof with plastic, a task performed by volunteer groups on subsequent houses.

The next morning the crew completed the job, removing the trunk and the larger sections of the tree to the nearest road right-of-way for pickup.

"It feels good to get a load off my back," said Liu, who collected the names and addresses of the crew and Corps volunteers and invited them to return. "When we rebuild, we'll have a party, and everybody come."

Chief's Holiday Message

The holiday season is a time of well-wishing and family celebration. It is also a time to give thanks for the many blessings and opportunities we have enjoyed. I welcome this opportunity to wish all members of the Army Corps of Engineers a happy holiday and thank you for your support to the soldier and the nation.

This season is also a time of reflection, and as the year nears its close, every member of the Corps has abundant reason for pride of accomplishment in our contributions to the Army's mission and to the country. Corps members were among the first on the ground in support of operations in Bosnia, and to respond to the ValuJet crash and the crash of TWA flight 800. When the Olympics came to Atlanta, Corps facilities and people played a key role in their success.

In addition to meeting these and other challenges, numerous Corps individuals and organizations have

earned recognition for a wide range of accomplishments, including 11 Hammer Awards in the past year for efforts to improve Corps programs and processes.

As we look toward the new year and beyond, we must focus on increasing our relevance to the Army and improving our support to the soldier. We will also face new challenges in our Civil Works and Work for Others programs as we support the effort to reduce the deficit and balance the budget.

I look forward to working with all of you as we continue our support to the soldier, and our service to the nation. My family and I wish you a joyous holiday season and a new year of personal and professional fulfillment.

Joe N. Ballard
Lieutenant General
Commanding

CRREL investigates extraterrestrial particles

By Marie Darling
CRREL

Meteorites found at the South Pole, bearing tantalizing clues of possible life on Mars, have been headline news recently.

But this is not the only research being done with extraterrestrial material. Few people know that the Corps' Cold Regions Research and Engineering Laboratory (CRREL) has what may be the largest collection of micrometeorites in the world. In a recent project funded by the National Science Foundation (NSF), a research team of three people (two from CRREL) collected hundreds of thousands of micrometeorites from the bottom of the South Pole Water Well (SPWW) in Antarctica.

Micrometeorites are extraterrestrial particles less than a millimeter (0.03937 inch) in size. "Despite their small size, these particles give us the most complete picture of the amount and type of extraterrestrial materials near the Earth," said Susan Taylor, a CRREL physical scientist and one of the scientists on the expedition.

Micrometeorites make up most of the 30,000 tons of extraterrestrial material deposited on Earth each year. Since they are tiny pieces of asteroids, comets and possibly other planets, they are valuable for research. But, although micrometeorites rain down everywhere on the Earth's surface, they are hard to find.

Why would CRREL travel to Antarctica to search for micrometeorites? Because Antarctica is a prime hunting ground for extraterrestrial material of all sizes. Few terrestrial particles blow into the interior of Antarctica. The ice at the South Pole is so clean that any particles in the ice have a greater likelihood of being extraterrestrial.

But how do you find the particles, and get them out of the ice?

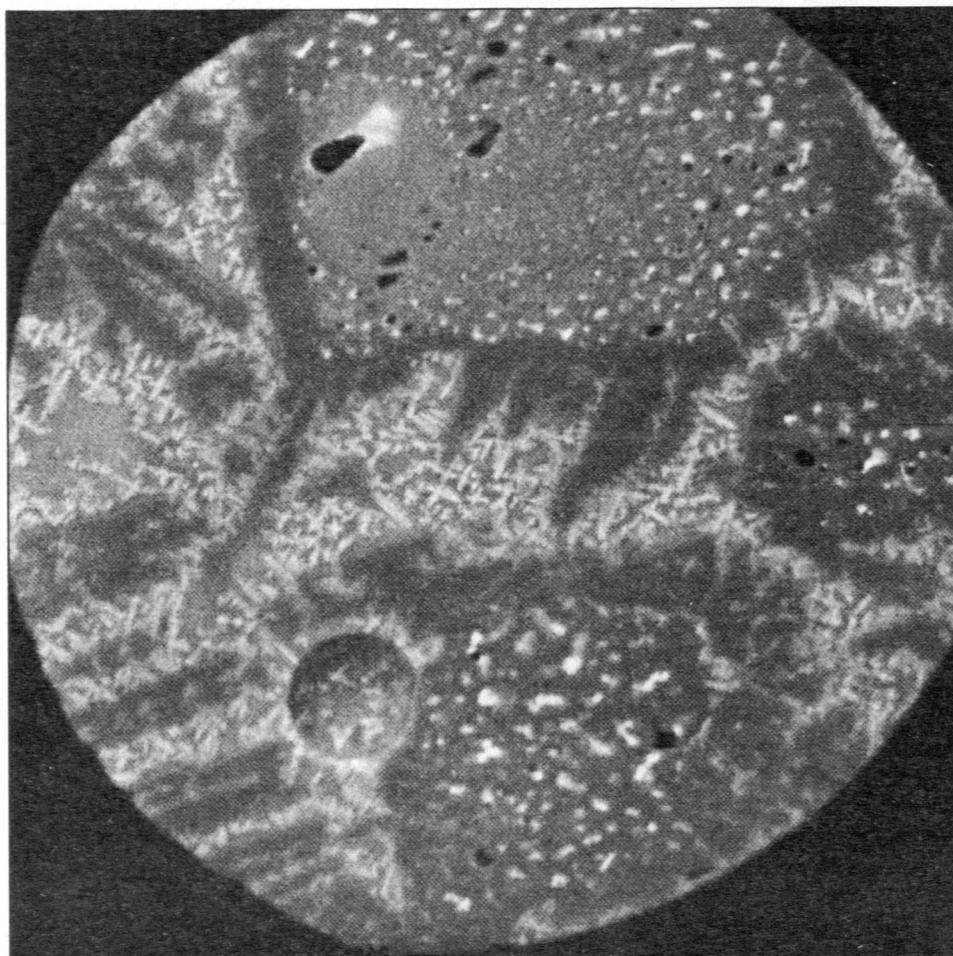
The SPWW was a natural place to look. It supplies drinking water for the Amundsen-Scott South Pole Station, using waste heat generated by the station to melt ice in a sub-surface chamber which serves as a reservoir. CRREL built the well during the 1992-93 field season.

CRREL researchers theorized that particles of all types would be found in a concentrated layer at the bottom of the well. The researchers' objective was to collect all micrometeorite particles from the well bottom. The hardest part would be to somehow vacuum them up, and that's eventually what they did.

It was a tough assignment. CRREL and NSF had to build a collector that could operate remotely under about 20 meters (65 feet) of water, 200 meters (650 feet) below the snow surface. It had to fit through a 30 centimeter wide (about a foot) well neck, and it had to survive prolonged exposure to ice-cold water. It was imperative that the collector not affect water quality, either.

To accomplish this, Taylor and CRREL engineer Jim Lever built what amounted to a remote-controlled submarine vacuum cleaner. The collector suctions and internally filters particles from the ice while moving over the well bottom. The researchers controlled the collector from the surface via a waterproof electro-mechanical cable, and use an underwater video system to steer it.

The main body is four feet wide and eight inches long. It is a machined and folded sheet of low-density polyethylene which holds a polyester filter fabric with 53-micrometer openings. When it is folded, a two-millimeter (0.07874 inch) gap remains through which the pump draws water and parti-



Under a scanning electron microscope, a micrometeorite actually looks like another planet. (Photo courtesy of CRREL)

cles. The water flow is high enough (more than a quart a second) to vacuum up all particles, and the filter is immediately behind the intake to minimize particle damage.

Spiked stainless steel wheels at opposite ends of the collector, powered by independent drive motors, move the collector around the bottom of the SPWW.

A total of 175 grams (about 6.25 ounces) of material has been collected, of which about 0.2 grams (0.007 ounces) is extraterrestrial. Although this does not sound like

much, it represents thousands of particles and may be the largest collection of micrometeorites in existence. Because the particles are so small, they are studied with scanning electron microscopes. These instruments allow researchers to see, photograph and chemically identify the minerals in the particles.

They are being studied in the U.S. and Europe to answer questions like how much extraterrestrial material reaches the Earth, where do they come from, and why are there different types of micrometeorites.



Hurricane duty leads to unusual mission

By Christina Plunkett
Jacksonville District

"I don't know what to do," said the woman between sobs. "Please tell me what to do." Her face showed the confusion and fatigue of weathering a hurricane. But James Sheriff of Jacksonville District didn't expect her look of terror.

Her home was a sight that would make the bravest heart pound. Normally, when a Corps employee does preliminary damage assessments (PDAs) after a storm for the Federal Emergency Management Agency (FEMA), the focus is on county or municipality damage rather than individual loss.

But the mayor of Aguas Buenas, Puerto Rico, made a point of taking Sheriff to this woman's home to get his opinion if it could be saved.

Part of a mountain, where the woman and her sick husband lived, had been washed away by rainstorms brought by Hurricane Hortense. Now their home sat at the edge of a 1,000-foot drop. With her husband bed-ridden, the distraught woman could not leave her home and feared for their safety.

Dealing with such fear is not unusual for someone doing PDAs, but nothing can be called "usual" while recording a hurricane's destruction.

Doing PDAs for FEMA is not a typical Corps assignment, and those who volunteer never know what they may find. The least they can expect while recording damage is unsafe and unsanitary conditions.

It was only a day after Hurricane Hortense ripped through Puerto Rico on Sept. 9 that six Jacksonville District employees headed to the Antilles Office in San Juan to support FEMA's PDA mission. They joined 11 Antilles employees for the mission.

They divided into two-person groups and each teamed up with a



Hurricane Hortense washed away part of a mountain in Aguas Buenas, putting this home and its residents at the edge of a 1,000-foot drop-off. (Photo courtesy of Jacksonville District)

state representative assigned by FEMA. Their mission was to assess the hurricane's damage to the local municipalities (roads, buildings, bridges, recreational areas and the utility systems) through technical assessments and taking photographs.

Each two-person team is usually guided by a civil defense representative or the local mayor, plus any other personnel they may want to accompany them, such as an area civil engineer.

These teams cover as much territory as they can squeeze into a 12-hour day. For Hortense, the damage was widespread. The PDA mission final report showed higher altitudes receiving severe road, bridge and utility system damage caused by mud slides and embankment damage.

The report also documented that some coastal areas experienced flash flooding as much as five feet

deep, ruining buildings, homes and recreational areas.

Sam Chine, a civil engineer, was overwhelmed by assessing the town of Toa Alta.

"When the La Plata River engulfed the area in 15-foot-high water, the area was washed away," Chine said. The flood knocked down trees, telephone poles, and swallowed the few homes and a gas station that occupied the agricultural area, according to Chine.

In Barceloneta, Sheriff, a civil engineering technician, saw a tremendous number of flood-damaged buildings and homes, roads covered in silt, and sewage strewn everywhere. While exploring the conditions of a park, the state representative with Sheriff tried walking into the park and sank to her knees in mud.

In Hato Nuevo, a tiny neighborhood on a hill in the town of Guarbo,

Adair Martin, a civil engineer, found 15 families that had been without water for nine days. When Martin, accompanied by vice mayor Portela and a legal representative, explained that it would take some time to process the request for funds to fix the waterline, the families decided to donate the materials for a temporary line and install it themselves.

Because the pipeline would cross an access road, the group needed technical advice from Martin. As Martin and the team walked the area with the residents and reviewed the situation, he said they would also need authorization from the town to bury the temporary lines. The vice mayor agreed to secure the authorization and to provide additional material to place a temporary line drawing water from a nearby site.

Immediately, the neighbors began talking about a work schedule, and as the news spread to others, Martin saw their faces light up.

"As I drove home that night, the memory of the residents and their new-found hope made me feel happy that I had the opportunity to play a small role in providing a solution to their problem and foster their community spirit," Martin said.

In the Aguas Buenas situation, Sheriff knew the area had already received more than 20 inches of rain. Any more and the mountain would collapse further, taking the house and its inhabitants with it.

Sheriff told the mayor that concrete supports could stabilize the bank, but he said the family had to leave their home. Since the next day brought new areas to assess, Sheriff doesn't know if they left or not.

"The experience showed me the importance of FEMA's PDA mission, and I realized the impact one person can have in an emergency situation," Sheriff said.

Apprenticeships transfer skills

By Todd Hornback
Louisville District

Nineteen apprentices are learning skills to become carpenters, iron workers, operating engineers and electricians at Louisville District's Olmsted Locks and Dam now under construction on the lower Ohio River.

An apprenticeship is an efficient way to learn skills through formal instructional training and hands-on work under direction of a journeyman.

According to James Bell, a 25-year-old iron worker apprentice from Paducah, Ky., "I feel like I'm doing something with my life now."

Bell works under the supervision of a journeyman and assists in

building the batch plant which will supply concrete during the Olmsted project construction. He attends evening welding classes at Paducah Tilgman and blueprint classes at Western Kentucky Technical.

Elizabeth Knoht, 37, is also in her first year as an ironwork apprentice. Knoht, a grandmother from Possum Trot, Ky., comes from an ironworking family.

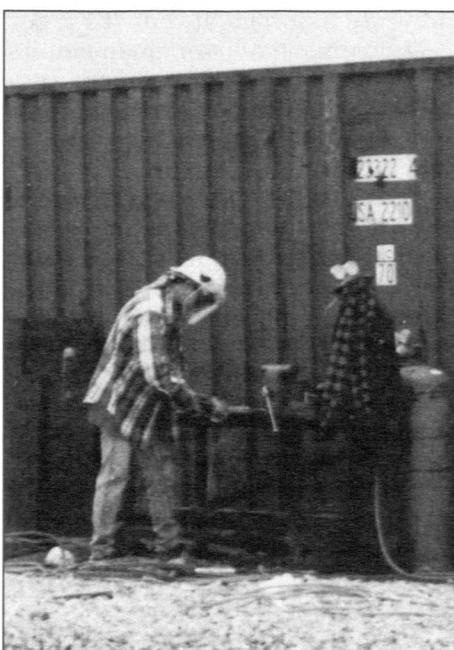
"I see this as a way to learn a trade that has the security of health benefits and a pension program," Knoht said. "It's hard work; I get dirty; I may be dragging when I leave at night, but I enjoy working outdoors."

Throughout human history, people have transferred skills from one generation to the next through apprenticeships. European craft work-

ers brought this practice to America. Today's apprentices are paid a percentage of a journeyman's hourly rate as they learn. Employer and labor organizations, educators, and government officials work together to ensure that the training curriculum and work experiences prepare the apprentice for a role in industry. Stacy Bowen, 25, is an operating engineer apprentice who operates heavy machinery.

"I'm sorry I didn't get into the apprenticeship training right after high school," Bowen said. "I'm looking forward to a career as an operating engineer."

Information on apprenticeship programs may be obtained from the U.S. Department of Labor, Bureau of Apprenticeship and Training.



Elizabeth Knoht serves as an apprentice in a field traditionally unfamiliar to grandmothers.

New Chief discusses Corps, future

Article by Bernard W. Tate
Photo by F.T. Eyre
HQUSACE

(Lt. Gen. Joe N. Ballard became the 49th Chief of Engineers and Commander of the U.S. Army Corps of Engineers during a ceremony on Oct. 1. In an interview with the "Engineer Update" on Nov. 7, he discussed himself and his plans for the next four years.)

Update: There's an interesting story behind how you heard about your nomination as Chief of Engi-

neers. Please share that story with the rest of the Corps.

Ballard: When I first heard I was being considered, I was on leave in Missouri. We own a home on the Lake of the Ozarks, and I was out bass fishing when my beeper went off. When I called my office at TRADOC, I was informed that the Secretary of the Army wanted to see me in about three days for an interview.

That's how I found out about it. It caught me by surprise because I didn't realize I had made it to the final cut until that phone call.

Update: How did you feel when you learned you were being considered for Chief of Engineers, and how did you feel when you were selected for the job?

Ballard: Both emotions were similar. As I said, it was a surprise when I heard I was being considered, especially since I never once lobbied for the job. When I was selected, my reaction was stunned disbelief.

When one spends his entire career working in his military profession, especially as a professional engineer officer, to suddenly arrive at the pinnacle came as a pleasant shock. I really didn't think I would be selected because I haven't served in USACE. I knew I was qualified, but I just felt I probably wouldn't be selected. So, stunned disbelief. Pleased, but stunned disbelief.

Update: You've never served with the Corps. What has been your contact with the Corps of Engineers in the past, and what were your impressions of the Corps?

Ballard: I've never served in USACE. I've served in the larger Corps, in the regiment, but never in the major command called the U.S. Army Corps of Engineers.

Primarily, my contact with USACE has been as a customer at small installations, large installations, and communities in Germany, on the receiving end of what the Corps does. My impression of the Corps was that it was a professional organization with fine folks, but a little out of the mainstream of the Army, and didn't always deliver everything they promised.

Those perceptions are shared by others outside the Corps, and that's one of the things we have to work on.

Update: Now that you're the Chief of Engineers, and you've learned more about the Corps, have your impressions of the Corps changed?

Ballard: My impression of the folks has not changed. It's no longer an impression; I know for a fact that we have some very professional individuals, dedicated individuals who do a great job for the Army and the Corps day-in and day-out.

But I've also found that my perception that the Corps is a little out of the mainstream of the Army is valid and, as I said, we have to work to move a little closer to the Army. There's some work to be done.

Update: What plans do you have for bringing the Corps of Engineers back into the Army mainstream?

Ballard: There's a couple things that I've done early-on. I received a commitment from the Chief of Staff of the Army to re-institute the Office of the Chief of Engineers in the Pentagon. I think that was a powerful signal. He agreed and we're in the

process of putting that office together.

I think it's important for the Corps to be involved in the current national debates in the Pentagon, Congress and the Office of the Secretary of Defense about the future of the Army. So I've requested of the Chief of Staff, and he granted it, to be involved in the four-star Commanders Conference. The Corps has always been outside of that, and we are now a part of it.

I've attempted early-on to re-establish the Corps as a player in the discussions that are ongoing in the Army, regardless of where they are, rather than staying on the periphery.

Another thing I will bring to this organization is the fact the chain of command will be enforced. This is still a military organization, and the orders, policies, and guidance from headquarters will come through headquarters and be passed down the chain of command. Responses will come back up through the chain of command.

One thing I have tried to impress on the civilian and military leadership in the Corps is that stovepipes will be used for information, not for orders, guidance and policies.

I think this is part of being in any Army organization and it makes for a formal, efficient and effective organization.

Update: Why do you feel it is so important to move the Corps of Engineers closer to the Army mainstream?

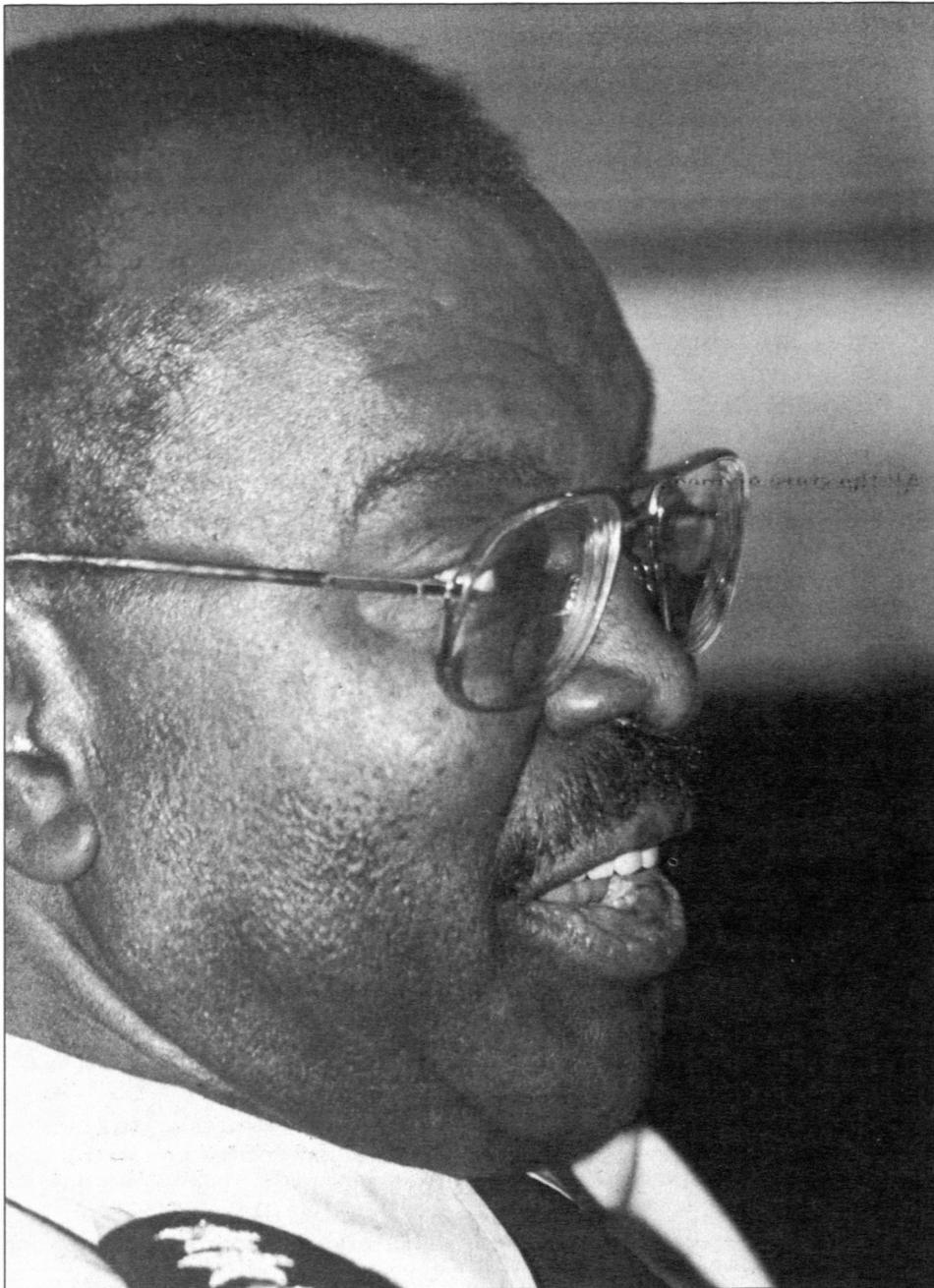
Ballard: It deals with those perceptions I mentioned earlier. I think it's important that the rest of the Army see us as relevant to them, that we are not an elitist organization working outside the framework of the Army.

There are many who think that civil works is all the Corps is interested in. I know now that's not an accurate assessment, but it's a perception among a lot of green-suiters. They don't see us as relevant to their needs, especially in installation management, base operations, and things of that nature.

The Corps is extremely relevant, or should be. We're not only relevant at the installation level, but wherever the Army lives and works. The Corps is proving to be relevant in Bosnia. We were relevant during Operations Desert Storm and Desert Shield.

I just think there is more that we can do. We need to be proactive in writing doctrine. For example, we should be key players in Army and Air Force contingency plans, so we're going to work hard on that in Washington.

And we need the folks in the field to make the Corps more relevant to installation commanders. We must be responsive. We have to talk to our customers, but foremost we



"I want them to know that not only will I be their Chief, I will be their biggest cheerleader and biggest champion."

Bill introduces big changes

By Candy Walters
HQUSACE

When it was first broached in the early 1980s, it was sworn at. Many thought it signaled the demise of the Corps of Engineers' Civil Works program. Today it is sworn by and called "landmark legislation" and a "major policy change for the better."

The Water Resources Development Act of 1986 (WRDA '86) has become one of the most significant laws to affect the Corps and its Civil Works program.

"WRDA '86 brought out the best in the Corps," said Robert K. Dawson, former Assistant Secretary of the Army (Civil Works) who helped shepherd the bill from negotiation to enactment. "It was a time of great change, and the Corps as an institution showed its capacity to change and deal with reality. There were people who didn't want to change, but the Corps, to its great credit, saw the need for change and went to battle stations."

WRDA '86 (Public Law 99-662) is considered landmark legislation for a number of reasons. It had been almost 16 years since any major authorization for new civil works water resources construction projects. Then Congress, the administration, and nonfederal sponsors agreed on a plan (which became WRDA '86) for the sponsors to share part of project costs.

It was the most comprehensive water resources development legislation enacted by Congress in 50 years. While establishing an equitable federal/nonfederal partnership in developing water resources projects, it authorized building or studying many water resource projects throughout the country.

The law also included reforms to make the Corps' civil works program more responsive to protecting the nation's environment, such as establishing requirements and guidelines for addressing mitigation measures for fish and wildlife affected by water resource projects.

"One thing that has impressed me about WRDA '86 has been that in each succeeding water resources bill Congress considered, the committee chairmen were committed to continuing the reforms brought about by WRDA '86, despite pressure from their peers to modify principles established in the law. They were adamant in protecting WRDA '86 and that is a great testament to the foresight that went into developing it," said Dave Sanford, Chief of Civil Works Policy Division.

Doug Harrison, president of the National Association of Flood Control and Stormwater Management Agencies (NAFSMA), likes the way WRDA '86 combines expertise.

"The Corps and local sponsors are producing better projects faster and



The Port of New Orleans is a monument to the Water Resources Development Act of 1986. (Photo courtesy of New Orleans District)

at lower costs," Harrison said. "With the increase in local monies, we're seeing the cycle of putting projects together cut in half, from 20 years to 10 years. It's saved time and money."

"There is no doubt that enacting local cost-sharing was the key to clearing the way for WRDA '86 and it forced local port sponsors to examine navigation projects closely," said Tony MacDonald, special counsel and director of environmental affairs for the American Association of Port Authorities (AAPA). "It also forced the Corps and ports to work closely to create partnerships. Though it has not always been easy, significant progress has been made."

"WRDA '86's a significant event that kept the civil works program viable despite the downturn in federal appropriations," said Doug Lamont, Chief of Policy Review Branch. "It demonstrated the value our project sponsors put in the civil works program, since WRDA '86 required sponsors to share in the costs."

"Before WRDA '86, local sponsors were responsible for much less—providing land, easements and rights-of-way; holding the U.S. free from damages due to construction; and for maintaining and operating certain projects after their completion. These were known as the a-b-c's of local cooperation," said Jim Rausch, Chief of Legislative Initiatives Branch. "Suddenly, WRDA '86 made local sponsors a fuller partner in the project by increasing their share."

"Breaking the cost-share logjam enabled enactment of WRDA '86. Sixteen years of pent-up expectations on the part of politicians, the Corps and nonfederal partners finally broke with the realization that there would be no substantial authorization for Corps projects without it," said Mike Strachn. Now the senior professional staff member for the House of Representatives' Water

Resources and Environment Subcommittee, Strachn worked in the Corps congressional office as WRDA '86 was developed and passed.

"It was a bipartisan, bicameral effort between the executive and legislative branches," Strachn said. "All the stars aligned and all the political needs came together. The nonfederal sponsors and groups would have preferred the pre-'86 arrangement, but they were faced with the choice—either cost-share or no program."

Corps districts helped ensure agreement on the cost-sharing proposal by getting local sponsors to sign cost-share agreements before the bill was enacted, Dawson said. The districts said if the sponsors signed before the bill passed, they would make sure those projects were among those authorized.

"That was a powerful incentive," Dawson said. "They held as many signing ceremonies as they could. It created momentum and pulled in everybody from senators to local sheriffs and helped break the opposition. People didn't want to be left off the train. Without the districts' support, it wouldn't have happened."

Because of the bill's cost-sharing component, many projects were scaled back, which increased the number of projects because the federal dollars went farther.

"It's turned out to be a blessing for the civil works program," said G. Edward Dickey, Chief of the Directorate of Civil Works Planning Division. "We've gained both credibility and funding support. Because project sponsors pay more of the costs, they take a more critical view toward the scale and scope of proposed projects, and generally we've seen smaller projects."

"With cost-sharing came a greater

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WATER RESOURCES DEVELOPMENT ACT '86

Deepening channel helps ship traffic flow

By Julie Aitken
New Orleans District

By the time the Mississippi River reaches New Orleans, it's almost a mile wide and 200 feet deep in places. Intent on finding the straightest, steepest path to the Gulf of Mexico, the Mississippi has changed course at least three times since 2500 B.C., and keeps trying to surrender to the Atchafalaya River.

It is also carrying millions of tons of sediment drained from 1.25 million square miles—31 states and two Canadian provinces.

It is a river that demands attention, and since 1824, when Congress authorized the Corps of Engineers to remove obstacles on the Ohio and Mississippi rivers, the federal government has paid the river due respect by enacting laws, acts, and regulations to manage its restless nature.

In 1968, New Orleans District began a study to deepen the existing 40-foot navigation channel in the Mississippi River to 55 feet from the Gulf of Mexico to Baton Rouge. The Water Resources Development Act of 1986 (WRDA '86) formalized the project's cost-sharing provisions.

"WRDA allowed for a partnership between the Louisiana Department of Transportation and Development (La. DOTD) and the Corps," said Al Naomi, project manager. "This partnership was instrumental in implementing the project."

Construction was divided into three phases at the request of La. DOTD. The first increment of work provided for a 45-foot channel from the Gulf of Mexico to mile 181, south of Baton Rouge near Donaldsonville.

Louisiana and the federal government signed a Local Cooperation Agreement in 1986. Construction began in 1987 and was completed in 1988. The \$44 million cost was shared—\$27 million federal and \$17 million state. Channel maintenance is 100 percent federally funded.

Under Phase I, New Orleans District also planned to mitigate for saltwater intrusion caused by the deeper channel. "The deeper channel allows salt water to push its way up the river along the river bed," said Naomi. "It has the potential to adversely affect the drinking supplies for communities along the river from the gulf to metropolitan New Orleans."

New Orleans District planned an underwater dredged-material sill to prevent salt water from moving upstream. This innovative method was put to the test during the severe drought of 1988. Before the sill was built, the saltwater "wedge" was advancing upstream at about two miles per day. Without the sill, the toe of the wedge would have im-

packed fresh water supplies to the metropolitan area.

Shortly after sill construction began, the upstream movement of the wedge slowed and eventually stopped near mile 104, just below the water intake for New Orleans.

A plan to barge fresh water to the water treatment plants downstream of the sill was implemented during the drought, providing about 101 million gallons of drinking water to communities affected by the salt water. Upgrading the water distribution pipelines and pumping stations in the lower part of Plaquemines Parish is part of a permanent mitigation solution for downstream communities and is under construction.

A second PCA was executed, this time for Phase II, in 1993. Work to deepen the channel to 45 feet from Donaldsonville to the port of Baton Rouge began in July 1994 and was completed five months later. The \$9.3 million cost was shared—\$6.3 million by the federal government and \$3 million by the state.

"We've enjoyed working with the Corps on these projects," said Ward Filgo, chief, Federal Projects Section, La. DOTD. "We have probably the largest saltwater mitigation contract to come with the Belle Chasse waterworks expansion. And we're looking forward to reviewing the design memorandum for Phase III."

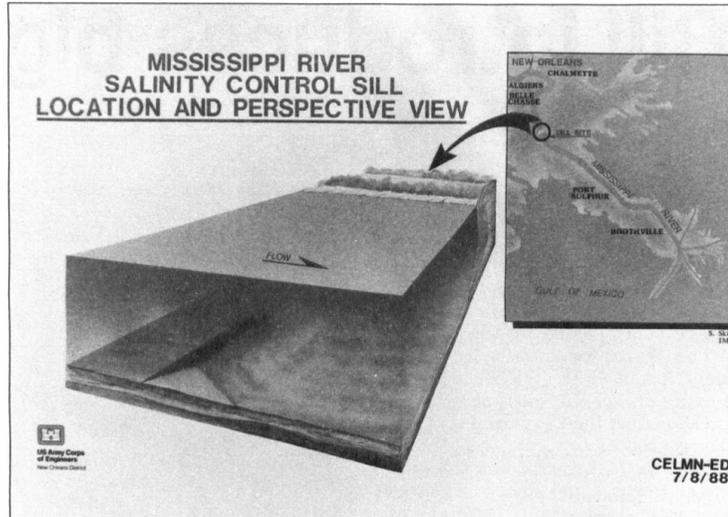
Sufficient navigation depth on the Mississippi River from Baton Rouge to the Gulf of Mexico is of major importance to the navigation industry.

"We represent more than 75 ocean shipping companies who have deep-draft vessels," said George Duffy, president of Navios Ship Agencies Inc. "Opening the 45-foot channel to Baton Rouge has allowed our principals to load their vessels to the deeper draft. This not only yields economic benefits, but keeps us in the competitive market on a worldwide basis for moving foreign commerce."

Cost-sharing requirements under WRDA for Phase III, which provides for deepening the navigation channel to 55 feet, is 50-50 for both construction and maintenance.

"We're looking at alternatives to reduce expensive maintenance dredging," Naomi said. "Waterways Experiment Station is analyzing possible improvements to the Southwest Pass channel and the crossings to minimize dredging."

A deeper draft will bring larger ships, increased tonnage and economic prosperity to the region. "Deepening the river to 50 or 55 feet will allow the ports of Louisiana on the Mississippi to remain competitive with the deep-draft ports not only in the U.S. but worldwide," Duffy said.



The underwater barrier sill is an innovative method of controlling saltwater intrusion. It was effectively implemented during the 1988 drought. (Photo courtesy of New Orleans District)

Partnering keeps Santa Ana project on track

By Mona Lee Goss
Los Angeles District

Ten years ago, when Congress passed the Water Resources Development Act of 1986 (WRDA '86), it had a significant impact on Corps of Engineers civil works projects. It changed the way water resources projects are funded by requiring greater participation from sponsors.

It also authorized construction for one of the largest Corps urban flood control projects—the Santa Ana Mainstem Project. It is an important project because flood control was becoming a growing source of concern for the burgeoning population of Southern California.

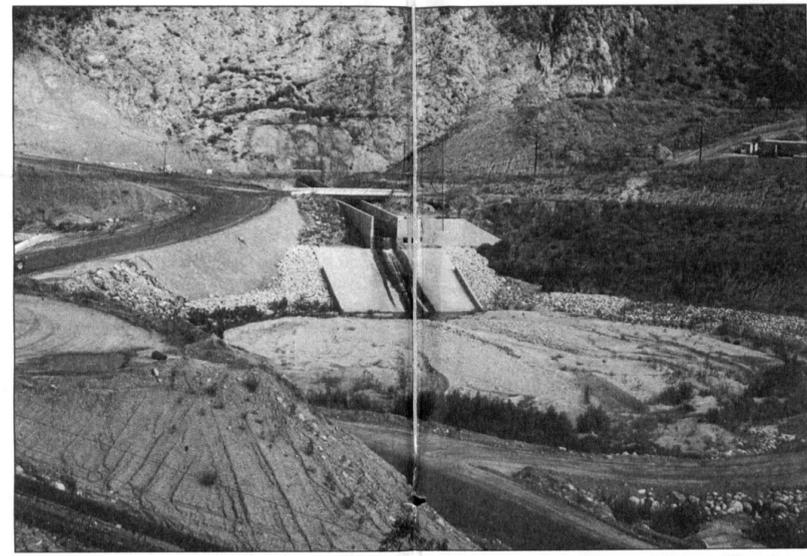
After World War II, great numbers of people migrated to the area, settling in Orange, San Bernardino and Riverside counties, leading to increased urban development along the Santa Ana River Basin, the largest river system in Southern California.

This growth led to a substantial increase in potential losses to families and industry from a major flood. At the request of the local governments and at the direction of Congress, Los Angeles District began a series of studies of flood control improvements in 1964.

These measures were aimed at improving existing flood plain management once controlled by the Prado, Fullerton, and Brea Dams built in the early 1940s, and San Antonio Dam built in the early 1950s.

From 1964 to the present, there have been significant changes in both study conclusions and recommendations, and in law and public policy, such as the need to comply with requirements mandated by the Wetlands Protection Order and the Endangered Species Act.

With the conclusion of the study and authorization from Congress to



This is the downstream end of the Santa Ana Project's outlet works showing the exit channel and plunge pool. (Photo courtesy of Los Angeles District)

begin construction, the Corps forged partnerships with flood control districts and Orange, San Bernardino, and Riverside counties.

This shared commitment to the project has helped keep the project on track and under budget.

"The Santa Ana Mainstem Project has clearly demonstrated the ability of multiple sponsors and the Corps to work effectively together on a project of such enormous magnitude and benefits," said David Zappe, Director of Riverside County Flood Control and Water Conservation District. "Of the various elements in the overall project, the citizens in our county have benefited tremendously from improvements to the Oak Street Channel in the City of Corona. The value of the project to the region, however, is the strength of the project, and we are proud to

EMP energizes environment, enhances rivers

By Denise Tyler
Rock Island District

A 10-year-old program, which has its roots in the Water Resources Development Act of 1986, is energizing the environment of the Mississippi and Illinois rivers in Rock Island District.

Public Law 95-502 created the Upper Mississippi River System Environmental Management Program (EMP) and gave direction to prepare a comprehensive master plan for managing the river system, which consists of the Upper Mississippi and Illinois rivers and several important tributaries. It also recommended an initial 10-year environmental program.

As an extension of this law, the EMP was authorized in fiscal year 1985 (FY85) with an initial budget

of \$30,000. WRDA '86 gave additional authorization, and with amendments and more appropriations, the current program is \$240 million, with completion scheduled for FY02.

Under the EMP, Rock Island District, the lead agency, works with five affected states (Minnesota, Wisconsin, Illinois, Iowa, and Missouri), St. Paul and St. Louis districts, and the U.S. Fish and Wildlife Service.

The EMP has five elements, with the main emphasis on habitat rehabilitation and enhancement projects. The other elements include long-term resource monitoring, recreation projects, economic impacts of recreation, and monitoring navigation traffic.

The rivers' ecosystems are home to a diverse array of fish and wildlife which live in channels,

backwaters, sloughs, wetlands, and adjacent uplands. More than 20 percent of North America's ducks feed and rest on the rivers during migration. A total of 154 species of fish and 50 species of freshwater mussels have been recorded.

Projects begin when sponsors (municipal, state, federal, or private agencies), identify problem areas in the backwaters of the Mississippi River or the Illinois Waterway. The sponsor usually offers ideas about what it wants accomplished, then a plan is developed and refined by the Corps, the Fish and Wildlife Service, and affected agencies. The agencies determine the problems and the features that can be incorporated into the project.

A primary concern of environmentalists is sedimentation. Since the rivers' lock and dam system was completed in the 1930s, sedimentation has reduced open water by about one-fourth. Dredging, levee construction, and island construction are typically used to preserve and protect the fragile habitat of the ecologically diverse backwater areas, and to reverse deterioration caused by sedimentation.

Dredging is used to reestablish sufficient depth to support dissolved oxygen requirements of fish during the heat of summer and under winter ice.

Levees provide the opportunity for moist soil management at water control structures and pump stations. Water is drawn off the leveed area during the summer so vegetation can germinate.

Once established, this vegetation can be flooded. The water level is slowly raised during the fall, with vegetation growth keeping the seed heads above water. The resulting pond inside the levee provides a resting and feeding area for waterfowl during fall migration.

Levees also may be built to deflect

silt-laden waters from backwaters. If flood water continuously moves into a backwater area, silt will settle from the water. By causing sediment-loaded water to back into a project area after going around a levee, silt settles out from only a portion of the water.

Island construction reduces the length of open water over which wind passes. When wind moves over open water, waves are created—the greater the length of open water, the larger the waves. Waves cause agitation that stir bottom sediments. Properly placed islands reduce the length of open water and so reduce water action, creating a protected area where vegetation can attach to the bottom and stay rather than being ripped up by wind-generated waves.

Islands also increase habitat diversity by providing a shallow zone to create nesting opportunities for waterfowl. Island construction may also offer alternative placement sites for dredged materials.

The EMP has identified 68 projects for habitat rehabilitation and enhancement in St. Paul, Rock Island, and St. Louis districts. Many are in varying stages ranging from completed, under construction, in design, and deferred.

EMP participants are working to prepare a report to Congress, scheduled to be completed by next September, to include accomplishments, lessons learned, and what remains to be done. The report's results will affect future Corps efforts to monitor, study, and restore the river system's natural resources.

The pioneering EMP has become a model for programs on other river systems and the Great Lakes. It is providing a better understanding of these rivers' plant and animal resources; how best to manage the rivers and their lands; and what can be done to protect, maintain, and enhance these rivers for the benefit and enjoyment of future generations.



Marsh Island in Illinois clearly shows the dredged channels. (Photo courtesy of Rock Island District)

Levee-raising project beginning

By Doug Garman
Baltimore District

More than two decades after Tropical Storm Agnes pounded the Wyoming Valley region of Pennsylvania with 18 inches of rain, Baltimore District prepares to begin building a levee-raising project that will protect the region against similar future events.

Authorized under the Water Resources Development Act of 1986, the Wyoming Valley levee-raising project involves several modifications to the region's flood control system. Built in the 1940s and 1950s to protect against a 50-year event, the system includes four federal flood control projects at Plymouth, Kingston-Edwardsville, Swoyerville-Forty Fort, and Wilkes-Barre-Hanover Township, Pa. It protects the third largest metropolitan area in Pennsylvania.

The levee-raising effort calls for increasing the height of 15 miles of levees and floodwalls between three and five feet, providing some new

floodwalls and levees to maintain system integrity, modifying closure and drainage structures, and upgrading and making modifications to 21 stormwater and sanitary pump stations in the project.

The project includes a mitigation plan to minimize adverse impacts caused by the project. Under this mitigation plan, as many as 53 communities may receive structural and non-structural assistance.

During a ceremony Oct. 24 in Wilkes-Barre, Pa., Baltimore District Engineer Col. Randall R. Inouye and the project's non-federal sponsor, Frank P. Crossin, representing the Luzerne County Flood Protection Authority (FPA), signed a project cooperation agreement clearing the way to begin construction.

Under this agreement, the FPA will oversee the local portion of the project and manage the mitigation plan.

Funding for the \$145 million levee-raising effort will be cost-shared with about 75 percent provided by the federal government,

12.5 percent by the FPA and the remaining 12.5 percent provided by Pennsylvania.

"We plan to begin construction in Exeter and proceed downstream to Plymouth," said Janet Griff, Baltimore District project manager. "We expect to complete this project in five to seven years. When complete, this project will protect the Wyoming Valley region against flood flows equal to Tropical Storm Agnes in 1972 that triggered the worst regional flooding in history."

All total, Tropical Storm Agnes caused more than \$1 billion in damages, destroyed or damaged five major bridges, left nearly 80,000 homeless and left many areas of Wyoming Valley without electricity for 104 days.

Crossin said this partnership project makes certain that Wyoming Valley and Luzerne County will never again be devastated by a storm the magnitude of Agnes. "Decades later, we still remember the destruction and loss that storm caused."

WRDA

Continued from page 1

role for sponsors," he said. "Along with money they bring a bigger influence on how the project will look. We've also seen change in how projects are planned and implemented."

As a result of WRDA '86 and its cost-sharing formula, the Corps has seen a shift in responsibility, according to Dickey. "Because of the added say of sponsors, the Corps changed its attitude and the way it does business by *seeking* ways to partner. Partnership is now the norm."

Sanford said, "I feel a responsibility to ensure that the Corps continues to adhere to WRDA '86 principles. It has caused development of a discipline in the system that benefits the civil works program through the scrutiny of sponsors, and pressure to minimize costs and maintain high quality service."

"It's been remarkable to see the willingness of a large federal agency like the Corps voluntarily look for ways to do business better," Harrison said. "This has resulted in productive relationships between federal and local entities. It's rare to see a willingness to work together such as this."

Harrison has participated in the changing atmosphere between the Corps and project sponsors on two levels. The first was on the local level with one of the first projects to go through the revised project design and construction phases under WRDA '86. The second was in his role with NAFSMA on a special Corps task force to develop a flood control model project cooperation agreement (PCA).

"On the local level, we saw a bene-

fit in the change of philosophy," Harrison said. "We took a project that had been expected to cost \$120 million and completed it for \$75 million. It was totally due to the Corps' willingness to open up the design and project management phases."

"WRDA '86 brought the Corps and project sponsors closer together, matching the needs of the non-federal sponsors with the federal perspective," Lamont said. "PCAs embody the partnership."

Developing model PCAs through NAFSMA and AAPA has gone a long way in helping the Corps and local sponsors focus on commitment to the project while developing the cooperation needed to work together, Lamont added.

"Because of the cost-share requirements, we owe our sponsors firm cost estimates and realistic timetables," Lamont said. "We've undertaken several management initiatives to reduce Washington-level review and processing times, and to develop a course on processing PCAs for our districts."

While the cost-share aspect is a major component of WRDA '86, a second part has almost equal importance—the biennial authorization for water resources projects.

"That allowed the Corps to keep its program manageable from a budget standpoint," Rausch said. "Sufficient authorization coming every two years keeps things moving."

"WRDA '86 itself represented a new policy direction for the civil works program, but it also re-invigorated the biennial authorization program," Strachn said. "That probably saved the civil works program because you can plan and design all

you want, but you have to have the authorization. That's the lifeblood."

Since the enactment of WRDA '86, 351 PCAs for specific projects, totaling tens of billions of dollars, have been executed. They range from major environmental initiatives such as the Everglades/Kissimmee Restoration Project to huge navigation harbor projects such as the Mississippi River Ship Channel.

As times change, WRDA changes. For example, WRDA '96 increased the non-federal cost share from 25 percent to 35 percent for new flood control projects. But change doesn't mean termination.

"I believe the commitments made in WRDA '86 will endure," Sanford said. "The challenge is to keep our commitments to the sponsors and maintain high levels of service in a declining budget environment. That caused us to make modest modifications in WRDA '96 that would help us provide services over a broader spectrum by increasing the non-federal cost share."

"Despite the changes proposed in WRDA '96, the principles and basic philosophy of WRDA '86 remain unchanged," Sanford said. "The real beauty of WRDA '86 is that it provided a yardstick to measure our policy development, but not lose flexibility. We can adjust as budgets or other pressures dictate without giving up the basic reforms."

"I think there's going to be increasing flexibility in the program and in the respective roles of the Corps and its sponsors in project study and implementation," Dickey said. "There's going to be continued reliance on non-federal cost-sharing and reducing project time and cost."

have to *listen* to them. If we can't meet their needs we must explain *why* we can't, and we must give them alternatives to assist in meeting their needs.

Update: *All this talk of increasing the Corps' relevance to the Army sounds ominous for our civil works program.*

Ballard: Absolutely not.

We are *not* going to scale back civil works. What we are seeking is to achieve some balance in our approach to our overall mission, not to emphasize one mission at the expense of the other.

The Corps has a mission that goes beyond civil works. We should seek that balance point, and I think we can do that easily without detracting from civil works.

It's all embodied, I think, in how we approach our day-to-day jobs, and I think I'm at the focal point of that. I think the relevancy flows from the things the Chief says, what he does, where he goes, and how he drives that through the organization. I think we can easily find a greater balance between our military program and civil works without taking anything away from civil works.

Civil works, the work we do for the nation, is essential. We will maintain momentum there. But we need to work on our relevancy to the Army also.

Update: *You've spent your entire career on the green-suit side of the Army. Now you command an agency that's mostly civilian. What challenges are you facing as a result, and how are you dealing with those challenges?*

Ballard: When someone says "the green-suit side of the Army," I'm not sure I agree with that. I think the Corps is *in* the Army. This is an Army organization, so I think I've always been right where the Corps is, in the Army.

My former organizations, Fort Leonard Wood and TRADOC, had hundreds (in TRADOC's case *thousands*) of civilians. So this isn't a new experience for me. I've dealt primarily with civilians in my last four assignments.

Update: *You are the 49th Chief of Engineers. Each Chief has brought a unique style of leadership and a unique set of talents and strengths. What do you bring to the Corps?*

Ballard: I bring 30-plus years of training as an engineer officer, and 30-plus years of experience in managing increasingly large and complex organizations. I think I bring a close relationship with the current Army leadership.

But I think the most important thing that I bring is a commitment to make a difference, to make improvements so that we are prepared to move strongly into the 21st century with a wealth of relevant talent and state-of-the-art technology.

The Corps is a great organization; we need to leverage the power we have. I think we can, and we will,

together improve our stance.

I'm not saying these characteristics are unique to me; all the other Chiefs had them also. But this my time, our time, and we just need to get on with it.

Update: *We realize you're still new to the job and your plans are still firming up. But can you give us at least a preliminary idea of what you want to accomplish, and what you want the Corps to accomplish, during your four years as Chief of Engineers?*

Ballard: I'm not prepared at this juncture to give you my new vision for the Corps. But I think everyone needs to know that a new vision of the Corps *is* being developed, and this will be *one* vision for the *whole* Corps.

My transition team has given me a lot of good recommendations. In addition, we had an outstanding Senior Leadership Conference in Kansas City, and an excellent district commanders' meeting at the headquarters. I plan to take the collective wisdom and recommendations from those three groups, as well as from customers, the Pentagon and Capitol Hill, to form the new vision.

I think it's important for everyone to understand that we will have *one* vision for the Corps. *One* vision, and that vision will *not* be a bumper-sticker. I'm absolutely committed that we will have a strategic plan, and we will visit the plan and the vision at least twice a year to make sure we are on course.

To answer your question, there are some *specific* things, regardless of the vision, that I think we have to work on. I've mentioned increasing our relevance to the Army. I want to improve service to *all* our customers. I'd like to see us as the organization of choice to *anyone* who needs engineering and construction management services. We are the premier organization, not only in DoD but in the nation, for delivering them.

But we have to work constantly, I think, to make sure that our reputation for quality, cost-effectiveness, and responsiveness is maintained at a high level.

Update: *We know you have your own priorities for the Corps of Engineers. But to the people in the field, the number one issue for a long time has been reorganization and downsizing. Can you tell us where we are headed?*

Ballard: Recently I met with the Assistant Secretary of the Army (Civil Works) and gave him my plan for reorganization.

The FY97 Appropriations Act required the Corps to have between six and eight divisions. We have to comply with that law. The law also requires the Secretary of the Army to submit the plan to Congress no later than Nov. 29.

By the time this is published, hopefully everyone will be aware of the plan. I'm committed to communicating it to everyone once approval is granted. I'm also committed to tak-

ing care of our folks wherever possible and to not leave anyone hanging during implementation of the approved plan.

I think the important thing is to get reorganization behind us and move on. The Corps has gone through three Chiefs, at least, dealing with reorganization. I think we are closer than at any time to resolving this issue, and hopefully it will be resolved no later than April 1997.

Update: *Moving on to more personal subjects. . .*

During your first town hall meeting, you voiced some opinions about discrimination that were quite striking. Please share those with the rest of the field.

Ballard: I have zero tolerance for discrimination of *any* kind, whether it's race, sex, religion, any type. I expect each member of the Corps to treat everyone exactly the way they wish to be treated.

It is my strong feeling that everyone must be treated fairly and with dignity and be given the opportunity to be all they can be. If people can't buy into that philosophy, they will have trouble with me, and they probably need to go work someplace else.

Update: *You have a reputation as the first computer-literate Chief of Engineers.*

Ballard: Pat Temperley, my secretary, walked in one day while I was pounding away on the computer doing my E-mail. I was surprised when she said, "Gosh, you're the first Chief I've ever seen working on the computer!"

I don't know if that's entirely true, but I tell you, we have to rely on technology more and more.

Update: *You said in your first town hall meeting that fishing is your favorite sport. Please tell us your best fishing story.*

Ballard: I really don't have a favorite fishing story. I'll just be honest with you—my worst day fishing is probably better than my best day in the Washington, D.C., metropolitan area traffic. So we'll just leave it at that.

Update: *Why do you enjoy fishing so much?*

Ballard: For two reasons. My father was a semi-professional fisherman. He did a lot of guiding and fishing in Louisiana, so I grew up with a fishing rod in my hand. It's just something I've done all my life.

The other reason is that it's probably the best way that I know where you can escape and do some solitary thinking without interruption. It doesn't matter if the fish are biting; it's just going through the motions I enjoy. It's a form of relaxation for me.

Update: *Have you ever fished in any Corps lakes?*

Ballard: Many of them.

Update: *What was your impression of them?*

Ballard: I was surprised to find

that the Corps manages about 450 fishing lakes. That's *a lot* of lakes. I think our lakes and recreation areas are one of the greatest contributions the Corps has given this nation.

I read an interesting fact the other day—80 percent of the American population lives within a two-hour drive of a Corps recreation area. That is absolutely amazing. It's a wonderful national asset.

And we maintain them well, we keep them clean, most of our boat access to the lakes is free, and we have a great staff. So I'm high on what we do in managing our lakes and assisting the public.

Another interesting fact I read is that our Corps lakes receive 370-some million visitors per year. That's one reason that I say we could be more relevant to the Army. I guarantee you that those 370-some million folks don't all realize those are Army employees they are dealing with. We plan to ensure that they will in the future.

Update: *How did you get the nickname "Smokin' Joe"?*

Ballard: That goes back to when I was an executive officer (XO) in the 101st Airborne Division, and it has *nothing* to do with my temperament. A lot of folks think that it does, but it doesn't.

The 101st was and still is a gung-ho outfit—bloused jump-boots, high-and-tight haircuts, the whole image. This was in the early '70s, and the premier boxer at that time was "Smokin' Joe" Frazier. Anyone who has been in a battalion will tell you that the guy who wears the black hat for the battalion commander is always the XO. So I picked up that nickname.

I'm not the same man today as Chief that I was as XO, but the nickname stuck. Every once in a while it pops up. I visited a member of Congress the other day, and when I walked in he said "Smokin' Joe! Come on in!" I can't get rid of that damned nickname for love nor money!

Update: *To wrap it up, are there any major messages that you want to send to the folks in the Corps?*

Ballard: In the past 30-some days, I have met many, many members of the Corps, all grades and levels, and I am enormously impressed by the quality and professionalism of the Corps employees.

I want them to know that not only will I be their Chief, I will be their biggest cheerleader and biggest champion.

I want every member of the Corps to focus on customer satisfaction and mission accomplishment, regardless of where they work, whether it is in engineering, admin, or logistics. We are a *team*, and we need to *act* as a team. I intend to ensure that the Corps is responsive and relevant to the customers.

I believe, with the proper guidance and motivation, there is little the Corps cannot do. We have the will and the means, if we all pull together.

Corps earns 11 Hammers during 1996

By Bernard W. Tate
HQUSACE

When sportscasters say a football player has been "hammered," it means he's been tackled especially hard. The Corps of Engineers got hammered 11 times in 1996, but we're proud of it!

In this case, "hammer" refers to the Hammer Award given by Vice President Al Gore's office to recognize federal agencies which supported the principles of the National Performance Review. These principles are putting customers first, cutting red tape, empowering employees, and getting back to basics.

The award is a framed carpenter's hammer, a reference to the \$400 hammers of earlier days.

The 11 awards were given to teams throughout the Corps, and the projects which earned them were widely varied.

Little Rock District

Little Rock District earned three Hammer Awards this year.

The first went to the stoplog inspection team. Inspections of stoplogs used for the annual lock dewatering showed that 85-90 percent of the welds did not meet safety standards. The team set up a procedure to inspect, evaluate and repair all stoplogs and bulkheads used to dewater locks and tainter gate bays. Instead of contracting the job, they used marine terminal workers and temporary welders, saving \$500,000 and preventing navigation system shutdowns.

The second Hammer went to the lock dewatering team for decreasing the time it takes to dewater a lock. The industry average for lock dewaterings is 21 days; LRD's average was 14 days.

The third Hammer went to the hydrographic survey team. Using new computer equipment, the team can survey 10 miles of river in three hours. The team saved \$43,320 the first year. Annual savings of \$106,320 are predicted.

Savannah District

The Hydrographic and Physical Support Section earned its Hammer for surveys on the ports of Savannah and Brunswick, Ga., the Atlantic Intercoastal Waterway and the Kings Bay Naval SUBBASE. They used advanced technology, including satellite positioning, to reduce the time and personnel needed for a survey.

Technicians also asked customers about their needs and concerns, and used the results to change report formats and refine report reproduction.

Huntington District

The Marmet Innovative Design Team earned its Hammer for examining lock design to find a faster, cheaper way to build the Marmet lock replacement.

The team met with members of the towing industry to determine customer needs, hosted workshops with other districts to exchange ideas, refined navigation project design, and investigated and incorporated innovative techniques to reduce the cost and time of construction.

The design meets river traffic needs, reduces impact on residents, and saved more than \$44



million. Study results were applied to guard and guardwall construction at Winfield Locks and Dam, saving more than \$4 million.

New Orleans District

The Maintenance Management Section got its Hammer for improving repair and maintenance of the dredge *Wheeler*.

They increased the reliability of the diesel engines and dredging system, and rewrote technical specifications for shipyard contracts. Items frequently overbid by contractors were rewritten. They reduced use of private shipyards and maximized using the ship's crew, in-house hired labor, service contractors and vendors to do the work.

These changes reduced the *Wheeler's* annual repair costs from \$9 million to less than \$2.5 million.

OVEST

The Office of the Chief of Engineers Value Engineering Study Team (OVEST) received a Hammer Award for using value engineering techniques to reduce design and construction costs in the Corps' fiscal year 1996 (FY96) program. The value engineering savings for FY96 exceeded \$346 million, if the amounts saved by the Army, Department of Defense, federal, state and local governments are totaled.

Baltimore and Pittsburgh districts

Baltimore and Pittsburgh districts earned their joint Hammer for improving the National Environmental Policy Act (NEPA)/Section 404 Clean Water Act Merger Process. This process plans and designs effective, safe, environmentally sensitive transportation systems.

The districts cooperated with federal and state agencies to expedite NEPA compliance concurrent with issuing Section 404 permits for three highway projects. Integrating these processes saved time and avoided duplication. Team members were empowered to make decisions for their agencies during meetings, and the entire process was cooperative rather than dictatorial.

They saved \$119 million and 11.5 years on the projects.

Detroit District

The locks at St. Mary's Falls Canal have served the nation since 1856. But only one of the four locks can now accommodate the largest Great Lakes vessels.

Studies show the need for a new lock where two of the locks are now, but securing local sponsorship has been unsuccessful due to the \$226 million cost estimate.

The Soo Replacement Lock Study Team "reinvented" the project. They abandoned the original design and developed a cheaper one which would still meet operational requirements. They used numerous sources, including other Corps districts, Design and Construction Innovation Task Forces, the district's architect-engineer design team, and the experience of lock operators and field personnel.

This cost-effective design earned a Hammer for increasing the potential for securing local sponsorship. It is estimated to cost \$174 million at 1995 prices.

Tulsa District

Tulsa District, in a cost-share venture with Edmond, Okla., built Arcadia Lake on the Upper Deep Fork River. Due to a dispute about cost-share expenses, about 500 acres along the south side of the lake were removed from the city's lease and returned to the Corps.

Managing this land became a problem because the project was staffed by only one person. Through interagency cooperation, the Oklahoma Department of Wildlife Conservation leased the land to be developed as an educational and research center. It will be the first for Oklahoma, and a first lease of this type for the Corps.

Tulsa District earned a Hammer Award for transferring management of the area and its costs to a nonfederal agency, improving relations with Edmond, and giving Oklahoma a chance to develop a state-of-the-art outdoor education center.

HQUSACE

The Civil Works Operation and Maintenance (O&M) program supports about 14,000 Corps employees and has an inventory of about 4,000 projects. About 800 are included in each year's budget. The inventory represents about \$150 billion in replacement costs.

About five years ago, the Corps, Congress, the Office of Management and Budget, and the Assistant Secretary of the Army (Civil Works), set out to improve the O&M program. This was done to handle resource constraints while serving customers efficiently and effectively at the least cost.

Senior O&M managers developed a Program Plan of Improvement. The plan focused on program development and budget execution, standard organization structure, standard operating procedures, performance measurement, and data management.

This initiative earned a Hammer Award for streamlining processes, regulations, and management in every level of O&M. All efforts have been directed to providing tools and authority to the person serving the customer.

Around the Corps

Founders Award

John W. Morris (retired), former Chief of Engineers and now President of J.W. Morris Ltd., Arlington, Va., received the National Academy of Engineering (NAE) Founders Award on Oct. 2 during the NAE's annual meeting. Morris was 44th Chief of Engineers from July 1976 to September 1980.

The Founders Award recognized Morris "for 50 years of distinguished service to the nation and the engineering profession in the development and management of large-scale projects, water resources, environmental stewardship, construction management, and engineering education."

In his acceptance speech, Morris affirmed his respect, obligation and gratitude to the Corps.

"That truly unique organization has kept a steady course and true vision as it fulfilled its varied, demanding and frequently controversial responsibilities in nation building, resource management and international engineering and construction," Morris said.

The Founders Award honors engineers whose work has long benefited the people of the U.S.

The NAE is a private, non-profit group of engineers from industry and academia. Along with the National Academy of Sciences, the NAE advises the federal government under a congressional charter. It also studies policy issues in engineering and technology, encourages education and research, and grants awards to distinguished engineers.

SES reassignment

The Secretary of the Army has approved reassignment of Charles Hess as Chief of Operations, Construction and Readiness Division in the Directorate of Civil Works at HQUSACE. Hess is currently Director of Engineering and Technical Services in Ohio River Division. He will assume his new position when Dan Burns retires at the end of December.

Fred Caver has been appointed Chief of Program Management Division at HQUSACE. He was previously Chief of Program Management in Lower Mississippi Valley Division.

Correction

The photos which accompanied "Tenn-Tom: Massive waterway project spawns equally massive effort to restore wildlife and timber" in the November *Engineer Update* were taken by Tim Dugan and Adrien Lamare.

Leadership development

Riding a bicycle is simple, they say; once you learn you never forget.

The same cannot be said of management skills. Too often, the tools crucial for successful leadership become rusty when not used. Tulsa District has developed its own solution by offering a Leadership Education and Development (LEAD) refresher course to managers and team leaders.

This refresher course emphasizes key aspects of the original LEAD course, including communication, values, counseling and conflict management. The two-day session lets managers reevaluate their approach to the never-ending challenges their work entails.

The LEAD refresher course has been tailored for the Corps, and has been reviewed and accepted by the Civilian Leadership Training Division at Fort Leavenworth, Kan.

Facilitators who would like to consider this course for use at their district can get the *Facilitator's Handbook* from Russell Holeman. His E-mail address is Russell.K.Holeman@usace.army.mil at Tulsa District.

TWA 800

The Achievement Medal for Civilian Service has been awarded to the crews of the *Hudson* and the *Driftmaster* for their role in recovering bodies and debris from the crash of TWA flight 800.

The *Hudson's* crew were Tom Dwyer, Edward Dwyer, and Joseph Daskalakis. The *Driftmaster's* crew were Richard Gaudreau, John Wilbur, Frederick Tang, James Brannigan, Elizabeth Finne, Hans Ganthier, Daniel Florio, William Carl, and Daniel Petrie.

Family housing

Military families stationed at Fort Huachuca, Ariz., can look forward to modern accommodations sooner than anticipated thanks to a Corps family housing project that was completed five months ahead of time and under budget.

The \$9 million project arranged for building 50 duplexes for 100 families in the Fort Huachuca base housing area.

With the money saved during the construction, Corps engineers added additional curbing, signs and gutters throughout the three new housing areas.

"The construction personnel and their management really pushed to stay ahead of schedule," said John Mallin, Corps construction representative in Fort Huachuca. "We have some pretty happy customers—DEH housing and the families who have already moved into the quarters."

The project was contracted as design-build work which means the contractor both designed and built the housing.

Other Corps projects at Fort Huachuca are the central heating and cooling plants, additions to military barracks, and remodeling work at Smith Middle School.

New TEC commander

Col. Robert F. Kirby became the new commander of the U.S. Army Topographic Engineering Center in a change of command ceremony on Oct. 31. Kirby joined TEC on Sept. 16 as the acting director. He will continue to perform this dual role until a new director is named.

Kirby replaces Col. Richard G. Johnson, who is retiring.

Mortar round

A St. Louis District occupational and health safety specialist, part of a Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP/FUDS) team led by Kansas City District, discovered a live mortar round from World War I on a Mississippi River bank in South St. Louis County.

The team was conducting a field site survey at the former Jefferson Barracks. Archeologist Mark Kodak and occupational and health safety specialist Hank Counts were part of the team.

A field site survey is a terrain walk of areas where research has shown ordnance and explosives may exist. The South St. Louis County visit was to see what effect, if any, removing ordnance would have on archeological artifacts to comply with the Cultural Preservation Act.



The Stokes mortar round is shown with a cellular phone and a quarter to indicate scale. (Photo courtesy of St. Louis District)

Counts found a Stokes mortar round in an area where 14 rifle grenades have been found this year. The mortar round was several feet from the Mississippi and had been deposited there by falling river levels.

The round was destroyed by an explosive ordnance disposal team from nearby Scott Air Force Base. A Stokes mortar round is a World War I weapon about 14 inches long, three inches thick, weighing almost 12 pounds and loaded with TNT or nitrostarch.

Carlsbad seawall

Federal, state and local officials officially broke ground Oct. 9 for the Carlsbad Shore Protection Project in Carlsbad, Calif. The seawall will help solve two problems:

- Coastal flooding is undercutting Carlsbad Boulevard, a main road paralleling the shore.
- Sand blowing across the road into Agua Hedionda Lagoon.

Carlsbad Boulevard runs along an artificial spit of land separating the lagoon from the Pacific. The spit has two openings for water to flow to and from the sea. Without the road, traffic would have to travel around the lagoon.

Keeping sand from blowing into Agua Hedionda Lagoon is important to both aquaculture and public fishing.

The plan is to build a 3.5-foot-high seawall along 3,504 feet of the beach. The barrier will be 3,104 feet of steel sheetpile, and 400 feet of rock.

NCO of the Year

On Oct. 25, the Corps of Engineers honored its Noncommissioned Officer (NCO) of the Year, Sgt. Russell L. Snodgrass, Company B, 249th Engineer Battalion.

The day of grueling competition began early Oct. 22 with the Army Physical Readiness Test. Later the soldiers appeared before a panel of senior NCOs who tested their knowledge of world affairs and basic soldiering skills. Candidates were judged on bearing, self-confidence, and awareness of military programs.

Snodgrass was born March 13, 1968 and joined the Army in March 1990. He started his career in the Air Defense Artillery as a Hawk systems mechanic and later transitioned to prime power.

His awards include the Army Achievement Medal (2d Oak Leaf Cluster) and Kuwait Liberation Medal. He is married to the former Regina Heger of Collenberg, Germany.

Unique scooter earns admiration of heroes

By Bernard W. Tate
HQUSACE

There's more than one way to have a cool set of wheels.

Kevin Brooks customized his electric scooter to resemble the race car owned by former football coaching legend Joe Gibbs and driven by Bobby Labonte. His unique scooter earned Brooks a chance to meet his heroes, and to become something of a celebrity himself.

"I'm a big fan of Joe Gibbs, especially when he was here in the Washington, D.C., area coaching the Redskins," said Brooks, a computer specialist with the Humpheries Engineer Center Support Activity. "I've always liked what Coach Gibbs stood for. He has good values, he's real down-to-earth and respects his fans, and he treats his employees like family."

Brooks is a stock-car racing fan, and kept up with Gibbs when he retired and went into racing. "I never had one driver that I followed until Coach Gibbs got into racing," Brooks said. "The first time I saw Bobby Labonte race, he won. And I liked that car."

Brooks has muscular dystrophy and uses an electric scooter to get around the Casey and Kingman buildings at Fort Belvoir, Va. He started customizing his scooter earlier this year after getting a decal identical to the one on the Gibbs-owned race car.

"Last March, when Joe Gibbs' team was racing down in Richmond, his Chevy came to a dealership in Fredericksburg," Brooks said. "I took the day off and drove down to see it."

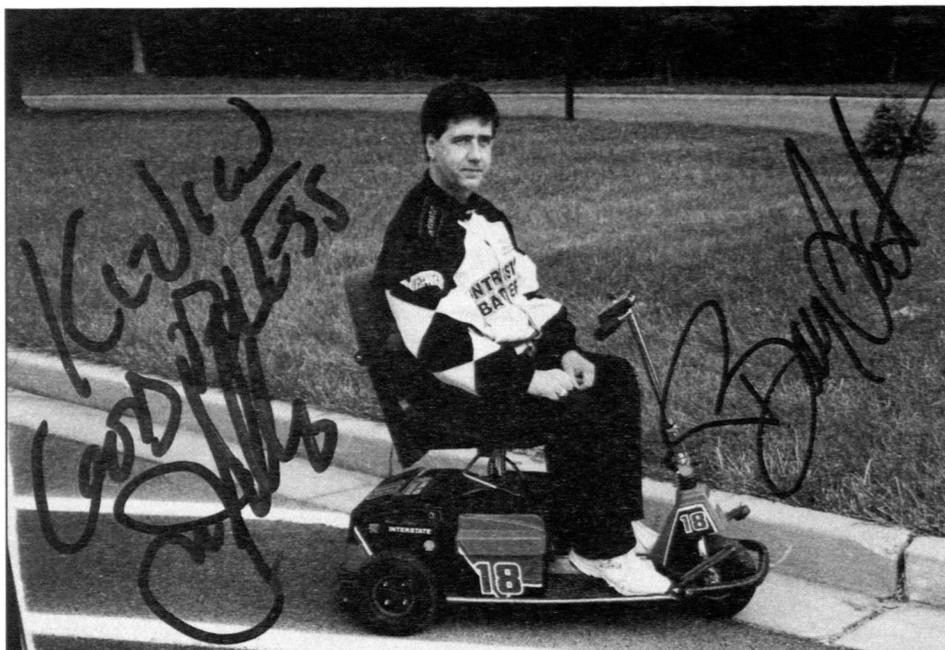
The race car's trailer includes a small souvenir shop. "They had the number 18 decal in the window," said Brooks. "I told the guy I wanted two, one for my van and one for my scooter, but I wasn't sure it would fit."

The souvenir salesman came out of the trailer with a decal, checked the fit on the scooter, then asked if Brooks wanted him to put it on.

"My scooter was pretty dirty, so I said, 'No, I gotta clean it first,'" Brooks said. "He said, 'Not a problem; just a minute.' He went to the trailer, came back with some cleaner and water, cleaned the back of my scooter and put that decal on for me."

That was the beginning. Gibbs' Monte Carlo is black and fluorescent green, with red and white pinstripes. Brooks painted his scooter the same colors in a similar pattern, with some of the same sponsor decals. He even replaced the scooter's gray tires with black ones, reversed the hubs and trimmed them in red like the race car's. The project took about three months.

Brooks knew he really had something when he rolled into the Interstate battery dealer in Woodbridge, Va. Brooks' scooter runs on Inter-



Kevin Brooks' most prized possession is this photo signed by former football coaching legend Joe Gibbs and stock-car driver Bobby Labonte.

state batteries, Gibbs' primary sponsor. Brooks had gone in for a bumper sticker, but he got a lot more.

"All these people came out of their offices to see my scooter and made a big fuss over it," Brooks said. "They treated me great. They gave me a life-sized cut-out of Bobby Labonte, a desk-pad, and stationery."

Brooks didn't know it, but that day helped pave the way for one of the biggest adventures of his life.

Brooks' chance to meet Gibbs and Labonte began when his uncle gave him two tickets to a race in Charlotte, N.C., for his birthday. Brooks remembered how pleased the Interstate dealer staff had been with his scooter.

"I sent letters to Joe Gibbs and Interstate with pictures of my scooter asking if I could get a pit pass and maybe meet Joe and Bobby," Brooks said. "Interstate not only sent me pit passes, they sent a hat, a polo shirt, and VIP hospitality passes!"

The race was Oct. 6. Brooks drove to Charlotte with his father on Oct. 5, Brooks' 34th birthday. That evening Brooks went to a fan club dinner at the shop where Joe Gibbs' race cars are built. About 400 people were in line to get Labonte's autograph.

"I got ready to leave and the photographer asked if I had met Bobby," said Brooks. "I said no, I would see him the next morning. He said to wait and went back and told Bobby I was there. Somehow, someone told the photographer to bring me to the front of the line to meet Bobby."

Labonte was impressed with Brooks' scooter and autographed the battery box on the left side, the side where the driver's name is placed on a race car.

"The next morning I went to the Interstate hospitality tent at the track," Brooks said. "I knew something was up when I got to the check-in point. The man working

the gate said, 'Good morning, Mr. Brooks. How are you today?' I had never seen him in my life, but I said, 'Fine, thanks.' He said, 'I'll bet you're wondering how we know who you are.' The pictures of me meeting Bobby Labonte were being passed around in the tent."

Those in the tent were all Interstate staff, dealers and sales people. Brooks and his father were the only ones not affiliated with Interstate.

Gibbs and Labonte came to the tent and gave short speeches thanking the salesmen and dealers for their support. "Bobby spent a few minutes talking to me, which I thought was really kind of him," Brooks said.

The Interstate staff set up an autograph table for Gibbs and Labonte, and told the group that each person could have only one thing signed because Labonte could not miss the drivers' meeting.

"I got in line with everyone else," said Brooks. "When I got to the table

the Interstate executives told Coach Gibbs, 'This is a real fan. Wait 'til you see what he's done.' I had a copy of the picture I sent to Interstate, but since I could only get one thing signed I asked Coach Gibbs to autograph my scooter.

"When Coach Gibbs came around the table and saw my scooter, he was really pleased and autographed the other side of the battery box," Brooks said. "Then he went back to the table. When they sign autographs, all they do is sign their names to keep the line moving. But when he saw my photo, he wrote 'Kevin, God bless, Joe Gibbs.' Then Bobby signed it on the other side."

Brooks also met R.T. Miller, co-owner of Interstate.

"Mr. Miller said, 'I saw the picture you sent us, and I was on the phone the day you came to our dealer in Woodbridge and caused such a ruckus. I had to come to the race to meet you,'" said Brooks. "That blew me away."

Brooks also took the pit tour, and got his own taste of being a celebrity when he became a photo opportunity for a number of other fans.

Labonte started the race in pole position (front inside) for having the fastest qualifying time, but he didn't win.

"He lasted about 50 laps," Brooks said. Labonte was in the lead, "and I was listening to my scanner when Bobby came over the radio and said, 'Tell my wife to pack our things; we're going home.' He had blown his engine coming out of turn three and had to coast into the pits."

Despite that disappointment, the day remains one of the best of Brooks' life.

"That photo means more to me than anything I have," Brooks said. "Interstate and Joe Gibbs and Bobby all made me feel like part of their organization. I couldn't have asked to be treated better."



Brooks shakes hands with former football coaching great Joe Gibbs.