

Pentagon renovation moves ahead

By Tom Fontana
Baltimore District

The Pentagon renovation program entered a new and exciting chapter this past summer as several high-visibility projects moved off the drafting table and into construction.

New projects now under way include building two new pedestrian bridges along the Pentagon's South Terrace, transforming the former motor pool interior garage into a state-of-the-art health clinic, installing a new high-tech security entrance control system in one of the Pentagon's main corridors, and building interior barrier walls which will help clear the way for Wedge 1 renovation.

"The renovation program is becoming a reality for many of the 25,000 employees that work in the Pentagon each day," said Lt. Col. Chris Boruch, Deputy District Engineer for the Pentagon Renovation Office. "A lot of the work we've done so far has been below ground or outside the building and simply beyond the view of most tenants."

Utilities

The new Heat and Refrigeration Plant, for example, on the southeastern edge of the Pentagon reservation, is just one of the many hidden successes. The new plant has replaced the old facility, which was obsolete and no longer serviceable. Since partial operation began in April 1996, the new plant has saved about \$750,000 in lower utility costs and now provides the Pentagon with all its hot water, steam, and chilled water for air conditioning. Despite temperatures that at times soared to more than 100 degrees this summer, Pentagon tenants kept their cool, thanks to the new plant's efficiency.

A new Sewage Lift Station on the perimeter of the Pentagon's North Parking Lot, and a new utilities tunnel below the center courtyard are also complete. While not readily visible to tenants, these facilities are critical to renovations that will be made inside the Pentagon.

Basement

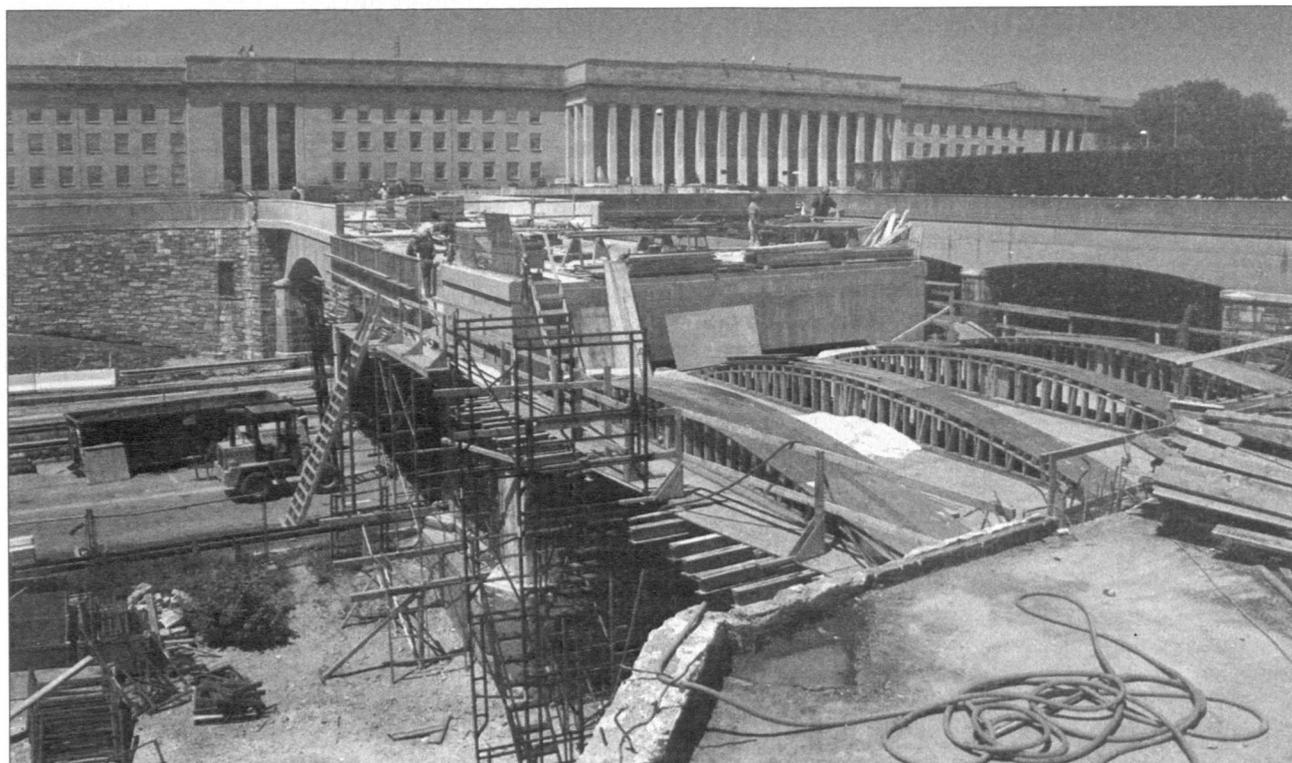
Phase 1 of the basement renovation continues to show tremendous progress, with many areas nearly ready for occupancy. Before Phase 1 construction could begin, however, the original basement floor had to be demolished and removed. After excavating about 25,000 cubic yards of material, a new concrete slab was laid about two feet lower than the original slab, clearing the way for an entirely new mezzanine level between the basement and the first floor.

This mezzanine level will add 220,000 square feet of office space to the Pentagon. It will be the new home to the Pentagon's Air Force Command Center.

Visible changes

Because these areas are not yet occupied, renovation progress has remained something most tenants only read about. Not any more.

"Construction progress is now being seen by thousands of tenants every day," said Kevin Powell,



Construction on the River Terrace Vehicular bridge continued on schedule through the summer. The bridge should open for traffic this month. (Photo courtesy of Baltimore District)

project manager for the Corps. For example, every day more than 5,000 personnel are being detoured around construction activity in Corridor 8 while the entrance is being renovated. "The renovation of the Corridor 8 entrance is critical since it will serve as a prototype for all of the Pentagon's secured entrances," said Powell.

Building the South Terrace pedestrian bridge will also catch the eye of thousands of Pentagon tenants. In fact, on their way to and from the Pentagon's South Parking Lot, about 7,000 personnel will watch each day as the bridge takes shape and eventually adds two new entrances to the Pentagon.

When completed, the bridges will ease traffic congestion on the road that circles the South Parking Lot, and provide pedestrians safer access to the Pentagon.

Two elevators in each bridge will provide handicap access, making the project fully compliant with the Americans with Disabilities Act.

Clinic

Another major effort is the state-of-the-art health care facility. It will consolidate, for the first time, three separate armed forces medical services into a single integrated ambulatory health care and dental clinic.

The new clinic will eliminate the redundancy of services that exists with separate clinics. While consolidating clinical expertise, it will greatly expand the network of expertise available to the clinic's physicians with computer and video conferencing capabilities. All this in an area that, until recently, was the Pentagon's interior parking garage.

The clinic's design is complete, and the former garage is being prepped -- removing asbestos and

lead-based paint, and repairing leaks.

"Converting the motor pool to a health facility posed several challenges," said Dr. Manal Ezzat, design manager for the Corps. "The design had to provide all the systems needed to support human activity, such as heating, ventilation, air conditioning, plumbing, communication, and power, all within a limited space."

When completed, the clinic will house 21 major groups or support areas including cardiology, dentistry, radiology, and physical therapy.

Swing space

Building the clinic, like most renovations discussed thus far, did not displace any Pentagon personnel. However, as Wedge 1 temporary construction begins, and with permanent construction slated to begin early next year, swing space accommodations become ever more critical to keep the renovation program on schedule.

Swing space refers to office space outside the Pentagon where tenants will move while the portion of the Pentagon, or "wedge," where they work is renovated.

The Pentagon has been divided into five wedges, with renovation of each wedge expected to last about two years.

"It's extremely challenging to meet the tenants' needs and ensure their smooth transition to swing space with minimal down time," said Melissa Jones, real estate specialist for the Corps. "We're making every effort to keep our customers satisfied."

"It's a very exciting time for all of us here at the Renovation Office," said Boruch. "We have a tremendous workload ahead of us, but the entire Baltimore District team is behind this monumental effort. We have a very talented staff to get the job done right."

Corps builds housing for enlisted Army families

Article and Photo
By Peter Reilly
Norfolk District

The Army leadership knows that one key to keeping qualified enlisted soldiers in the Army is to build first-class housing for military families.

Early in 1995 the Directorate of Public Works (DPW) at Fort Lee, Va., realized that renovating the Wherry Housing units at Jackson Circle was not economical and could not correct the inefficiencies of the units.

They decided to demolish them and replace them with new residential townhouses. With the help of Norfolk District, a replacement project was developed, solicited and awarded. The Hunt Building Corporation from El Paso, Texas, offered the best proposal for the project.

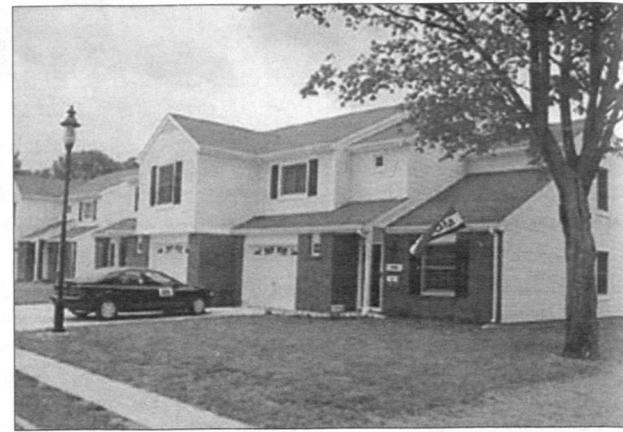
"Our goal was to provide housing which would

be the best in any service, let alone the Army," said Carl Kohan, Fort Lee DPW project manager. "What we developed here at Fort Lee is the premier housing community for the Army. We want Fort Lee to be the assignment of choice for our military servicemen and women."

First, 174 housing units built in the 1950s were demolished. Then 30 four-bedroom units, 90 three-bedroom units, and 54 two-bedroom units were built. The project cost \$16.5 million.

The new community has premium features, including:

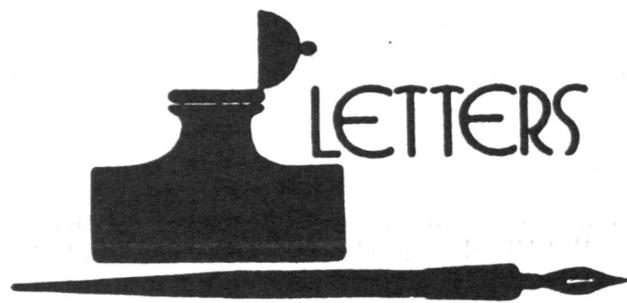
- Hardwood floors in the living and dining rooms.
- Downstairs half-bathroom.
- Garage and off-street parking.
- Ceramic tile bath floors and tub surrounds.
- Carpet in bedrooms and hallways.
- Oak hardwood kitchen cabinets.
- Laundry room with hobby area.



The new Army Family Housing areas at Fort Lee, Va., are designed to look like suburban neighborhoods in Anytown, USA.

- Large interior and exterior storage space.
- Pantries.
- Terrazo tile entrance foyer.
- Covered patio area.
- Lighted neighborhood walk.
- Tot-lot playgrounds, tennis courts, basketball courts, volleyball courts, and picnic areas.

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For Alicia

(Editors note: William E. McCoomb asked us to forward this letter to Alicia Gregory, who wrote about her 100-pound weight loss in the August Engineer Update. We were happy to comply, and to share the letter with the rest of the Corps.)

I am a retired Corps of Engineers employee and receive the *Engineer Update*. I enjoyed reading your efforts in losing weight for you. Congratulations to you, Alicia, in concern for your health and looks. Makes you feel really good when you accomplish a goal. Keep going, strong young lady!

I ride a 21-gear lightweight bike early in the morning around the New Hampshire seacoast and into the surrounding states just for fun, and the enjoyment of fresh air, and the freedom of being on a bicycle. I ride like a pro on the drops.

I come home about 7 a.m. for breakfast, then off to work as a grounds care person at an estate which was built on the ocean at Rye, N.H., by the Studebaker family.

I love every day of my activities. I am now 66 years old and act like 30.

Alicia, you are an inspiration to others in your efforts.

Bill McCoomb

And you are an inspiration as well. **Editor**

Camp Pelican

I'm relatively confident that I will not be the first person to write you concerning your headline (*Camp lets disabled kids feel normal*) above the article about the summer camp in Louisiana written by Lira Frye in the September edition of *Engineer Update*.

Several people in my office have noted the impropriety of the word "normal." Your use of it implies that at all other times of the year these children are not normal, which from my experience just isn't true.

I respect the people who put on the camp, and it is nice to see this kind of article in your publication. While I was reading it, however, I couldn't stop shaking my head in both astonishment and anger at the lack of thought put into the headline.

David Tajkowski
St. Louis District

Liked awards insert

I just received a copy of the September 1997 *Engineer Update*. I was pleased to see the addition of the Corps National Awards Special Insert. These folks have worked very hard for many years to gain national recognition and they deserve national exposure.

In 1992, when I received the Corps Regulator of the Year Award, no such recognition was done at the national level that I am aware of. I always thought I didn't rate recognition because I was in an engineering organization and I was not a professional engineer, as I did see many engineer awards presented in your paper in 1992 and later. Therefore, I am especially glad to see that all fields of expertise are represented in your insert.

These awards are often lifetime, career-culminating events, and I am glad that the *Engineer Update* allowed me to read about those who excel in

their fields. Strangely enough, I know one of the people who received an award. Because she is a modest professional, I would have never known of her great achievement without your insert.

Make the national awards a yearly insert!

Michael Doherty
Walla Walla District

The Engineer Update relies on the districts to send us information about their people. In the past, we sometimes did not hear about some award winners. We created the insert to highlight national-class winners throughout the Corps of Engineers, and we plan to make it an annual feature. **Editor**

Engineer of the Year?

After reading the September 1997 *Engineer Update*, I was curious if anyone else noticed an anomaly in the Special Insert on National Awards.

I certainly applaud all those whose accomplishments were recognized by a national award. However, I couldn't help but notice that conspicuous by its absence among the myriad of awards for various functions and roles was an Engineer of the Year Award.

Perhaps that's why the insert was entitled "Corps National Awards" in lieu of "Corps of Engineers National Awards?" Or perhaps it was only a Freudian slip, in subconscious recognition of the continuing apparent movement away from our role as the nation's engineers?

Mike Rector
St. Louis District

As far as we know, there is no Engineer of the Year Award or we would have included it. It seems conspicuous to us in its absence, too. But the reason the insert carried a shorter title was because it fit better. We hope the day will come when Corps people can stop dividing themselves into two camps (engineers and everyone else) and simply come to view themselves as part of one team. **Editor**



Seattle builds C-17 bed-down facilities

Article and Photo
By Gerry Arbios
Seattle District

When the Air Force's C-17 transport aircraft bed down in new facilities at McChord Air Force Base, Wash., the airmen stationed there will bunk down in some new beds of their own. The first of two new dormitories on the base was completed in July and the new occupants started moving in August.

The district is currently managing 10 projects for the C-17 bed-down. When the \$130 million project is completed, a total of 24 projects will have been done.

The new dorm houses 72 enlisted personnel and provides room-bath-room modules, with shared kitchens, laundry, lounge, and storage rooms. The first phase of the \$4.5 million dormitory construction took off in May 1996.

Work has started on the second dormitory (a mirror-image of the first) with a landscaped patio in between. A clock tower will be built nearby and face toward the boulevard that runs down to the wing headquarters.

The C-17 Globemaster III is the Air Force's newest cargo plane to rapidly deploy troops and heavy cargo. In 1999 McChord AFB will become the West Coast home to a new fleet of 48 aircraft.

Because of the need to get designs underway for the fiscal year 1997 (FY97) projects, the *charrette* design process was used. An accelerated design procedure, *charrette* allows architects, users, base, and command personnel to establish a functional design along with a site plan and elevations in just five working days.

Project manager Dick Swanson says the process worked so well, and those involved were so pleased with the results, the Base Civil Engineers Office and the command requested the same procedure for the FY99 program.

Corps engineer Jim Ulrich also appreciates Swanson's project management, saying, "During



Contractors place concrete for the maintenance training facility for the C-17 program at McChord Air Force Base in Washington state.

the design phase, for the first time, field people were invited to join in the *charrette* and design review process. We were able to give previous lessons learned at McChord to the designer."

Ulrich heads the McChord Resident Office that recently moved on-site for the C-17 construction phase. To ensure a smooth operation, Ulrich meets with McChord's Base Civil Engineers and his staff weekly to go over how construction is progressing. According to Swanson, "Ulrich emphasizes safety during construction and assures

the quality of construction is maintained according to the contract and the customer's wishes."

But Ulrich is quick to pass the kudos on to his staff. "We have a great crew at McChord, from project engineers to the construction representatives to the office and technical engineers from the Fort Lewis Area Office. Time is money and the team is not shy about helping each other out in the trenches. Together we'll make it happen and the project will be a success for the Air Force."

The McChord team has also been renovating an older building for the Consolidated Support Activity. Corps construction representative Steve Rossignol has been working on this for two years. Some of the challenges Rossignol faced were safety considerations in gutting a four-story building, including cutting through concrete 18 inches thick, and asbestos abatement.

Rossignol met regularly with his base counterparts and the future occupants to ensure customer needs were met. The multi-use facility will house the base communications center, the library and the base education program.

Another facility under construction since March 1996 and nearing completion is the Consolidated Squadron Operations (Squad Ops) building. The two-story 31,600-square-foot building will house aircraft operations with the flight line maintenance personnel. The facility will provide rooms for briefing and debriefing, flight planning, training and testing, and other rooms to support the staff. The new Squad Ops facility will be used to support the C-141 Starlifters until the larger C-17 fleet gradually replaces them.

In addition, construction started in July on the C-17 Maintenance Training Facility. The concrete foundation and floor slab were placed in July by a crew and leveled using a new laser screed, a computerized machine which leveled the concrete minutes after it was placed.

The new facility will house large-scale mock-ups, tools and classrooms to provide specialized hands-on instruction for C-17 maintenance where the classrooms and training devices are co-located in one massive building.

Enlisted housing

Continued from page 2

It was important to the DPW to build units which were maintainable and conserved energy, and the new community meets both goals. The heating and air conditioning system uses high-efficiency gas-fired furnaces, and the air conditioning system also has an efficiency rating which exceeds the Department of Defense's minimum levels.

The windows are the "Low-E" type which help reduce heat gain in the summer, prevent heat loss in the winter, and reduce fading of carpets and furniture. The windows also tilt-in for easy cleaning. All plumbing fixtures are low-flow design and comply with mandatory water conservation requirements.

"These units are well-accepted by the new occupants," said Susan Hill, housing division site agent for the project. "They like the living space as well as the large storage areas. Housing had much more difficulty placing residents in the old Jackson Circle quarters."

Hill also said the quarters are designated for junior non-commissioned officer occupants only, but some officers are interested in moving into the neighborhood.

"This is the best housing Hunt has ever built," said Bob Landoll, Hunt Building Corporation project engineer. "Several features in these units are typically found only in custom houses costing

\$300,000 or more."

The first phases of the project have been completed, and the units turned over to Army families. One of the first families to move into the four-bedroom units was Pfc. Douglas Everhart, his wife Candi, and their three children.

"I like these units better than any other units I have lived in," said Candi Everhart. She is the child and grandchild of servicemen, so she knows military family housing. Everhart said she liked having the washer and dryer, a feature not available in their former quarters. Everhart said she is looking forward to the completion of the playgrounds and other recreation facilities. She is already a member of the Jackson Circle neighborhood watch.

Staff Sgt. Eric Stoakley, his wife Patricia, and their two children were residents of the old units at Jackson Circle. "I can't even compare these units to the old quarters," Stoakley said. Stoakley, who has lived in Army family housing for the last 12 years, said the new units are the best he has seen. He said that some of the best features include the garage, the duplex arrangement, and not hearing his neighbors.

His wife said she liked the openness of the entry hall and stairway. She said the stairways in the older units were steep, but the new stairs are easier to climb and descend.

Corps lab shows scouts uses for recycled plastic

By Kirk Manley
CERL

Taking part in the National Scout Jamboree (NSJ) gave Lake Lattimore memories to last a lifetime. Lattimore, detailed to the Public Affairs Office (PAO) at the Construction Engineering Research Laboratories (CERL) organized and staffed an exhibit in the NSJ's Army Adventure Area at Fort A.P. Hill, Va., July 28-Aug. 6.

The U.S. Army Forces Command tasked CERL to display the Army environmental exhibit developed for the NSJ in 1993. But when the PAO team took it out of mothballs, it was too dated and dilapidated. So Lattimore led an initiative to design a new exhibit featuring recycled materials.

CERL's research and development (R&D) in recycled materials includes reusing construction and demolition wastes, and applying recycled plastic lumber in construction and engineering. Most of CERL's R&D in recycled materials came under the Construction Productivity Advancement Research (CPAR). CPAR is a Corps/industry partnership to advance construction productivity and reduce costs.

CERL recruited help in displaying recycled plastic lumber products at the NSJ through loans from five U.S. manufacturers of polymer-based material.

"The manufacturers donated a deck, picnic tables, trash receptacles, and a park bench, all made entirely of recycled plastic lumber," Lattimore said.

The NSJ attracted more than 35,000 scouts from across the country. "There was an incredible number of people who visited our exhibit," Lattimore said. "We estimated between 12,000-16,000 scouts and others visited throughout the week. We had groups enter the tent in intervals of 30-45 visitors

for a five-minute briefing. We decided to explain our exhibit in this format because of the small size of our staff."

Staffers included Dr. Steve Warren, a researcher at CERL, and four soldiers. "It was a thrill to be part of the Jamboree, not only due to my interest in scouting, but as a CERL representative," Warren said. His research focuses on stabilizing and revegetating military lands damaged by training. He is testing blocks made of recycled tires to harden intensive-use tracked vehicle areas, and samples of the block were part of the display.

The team also gave the 40-by-60-foot tent some patriotic flourishes. "We filled it with military marching music, American flags, and red, white, and blue balloons," Lattimore said. The exhibit included a three-dimensional color water conservation stand, and various recycled plastic displays.

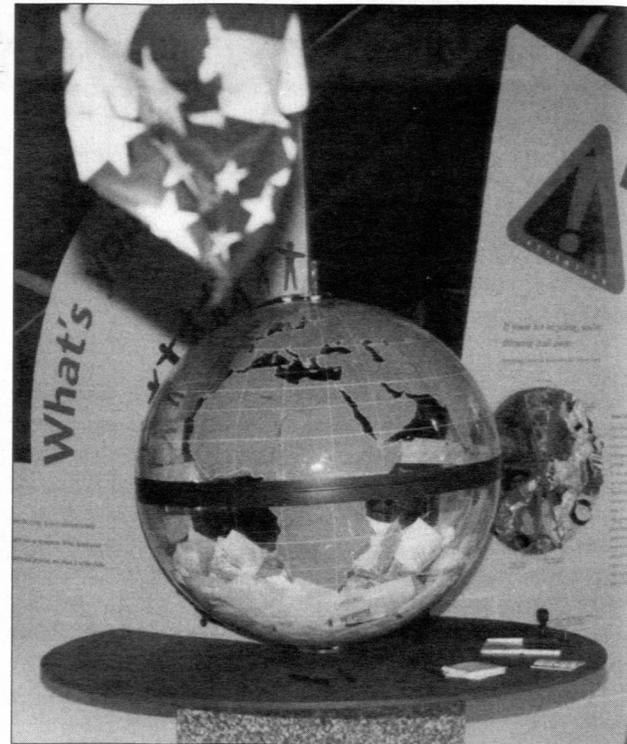
One popular display was a clear plastic globe on a polymer-based composite stand. Scouts were asked to write down ideas on what should be recycled and place them in the plastic globe.

"This was a hit," Lattimore said. "We ran out of our pieces of paper, stamped with the Corps logo, in the first two days of the Jamboree."

"Some scouts were so intrigued that they returned as many as three times," Warren added.

After examining plastic lumber products outside, visitors filed into the tent where the exhibit was housed. Warren and Lattimore briefed them on the three Rs of conservation: Reduce, Re-use, and Recycle. "We also told scouts about the limited landfill space in various regions of the U.S. and the Army's conservation efforts," Lattimore said.

The NSJ was an opportunity to educate youth on the Corps of Engineers' mission and CERL's re-



This plastic globe was a popular part of a CERL display at the National Scout Jamboree. (Photo courtesy of CERL)

search. "We showed that there are great things the Corps does for the country's infrastructure by concerning ourselves with conservation and environmental issues," Lattimore said. "It was also a great opportunity to portray a positive image of engineers to the scouts."

Lattimore's team also passed along environmental advice to the scouts. "We told them they are the stewards of our land," he said. "They can help take pressure off landfills by reducing the volume of waste thrown into them. And we asked to hear their recycling ideas." Lattimore brought back all of the ideas from the plastic globe display and gave them to CERL's environmental researchers.

N.Y. updates Times Square landmark

By Jack Friedman
New York District

One of New York's familiar landmarks at Times Square, the Armed Forces Recruiting Station, may have a facelift in its future.

Though less than 400 square feet in size, the station, located at the Crossroads of the World (Broadway and 43rd Street) has been a powerhouse recruiting center for the Army, Navy, Marines and Air Force since 1950.

But, at age 47, it is showing its years despite several past renovations to ensure a contemporary look and preserve the station's vitality. The Times Square Business Improvement District (BID), an authority created by local businesses to improve the Times Square environment, is concerned with how the recruiting station will fit in with its plans for Times Square.

To address the BID's concerns, the chairman of the Joint Recruiting Facilities Committee recently asked the U.S. Army Corps of Engineers to develop several alternate plans to renovate the recruiting station, provide cost estimates, and produce an architectural rendering.

BID specifically stressed that the recruiting station to blend with the program to improve the Times Square area.

New York District is forming a committee to develop standards for internal upkeep of the station, which is small and becomes easily cluttered. They are also considering a grand opening ceremony when renovations of the now-dowdy facility are

complete. Since the station enjoys high visibility, it has the potential to garner support from local and national celebrities to provide an extra boost to the New York recruiting effort.

The Times Square facility, a visible icon to millions of tourists annually, is probably the most famous recruiting office in America. The Booth, as it is commonly called by recruiters, is the busiest walk-in recruitment office in the country.

And it is successful, said Lt. Col. John H. Bullock Jr., Commander of the U.S. Army New York City Recruiting Battalion. "It plays a very important role in our recruiting mission, which is to provide the strength for America's Army. It's also an important part of the rich New York City history. To move it would have an adverse impact on Army recruiting. It should stay right there, in the middle of the greatest city in the world."

The present booth's ancestor was a 14x18-foot cottage-style building on the same site, which was built for the Army in May 1946 under a temporary permit from the City of New York. That permit was superseded by a permanent one issued in 1950 by Robert Wagner, Jr., Manhattan Borough President, granting indefinite, no-cost use of the site for a single, four-service recruiting "booth."

The 360-square-foot stainless steel and glass structure was built and is maintained at federal expense.

The Corps of Engineers has a long history with the little recruiting booth.

In 1969, the USO was allowed to mount a sign on the roof, advertising that its services were avail-

able two blocks north. In 1977, the station was renovated by the Corps, then refurbished in 1980 following a fire (believed set by a protest group) that caused extensive damage.

In 1987, all electrical systems, including interior and exterior lighting, were upgraded by the Corps. In 1988, the illuminated "zipper" sign that remains mounted on the roof, was donated by Sayag, Inc., a private firm.

In 1991, the Corps replaced the station's clear glass with tinted, energy-efficient plate glass, following a renovation of the booth's interior and exterior by Navy Seabees.

An inspection in 1992 confirmed that no further exterior upgrading was required. In 1993, the outdoor signs were upgraded, and this year, minor repairs to fluorescent lighting fixtures were completed.

New York District's Real Estate Division services 368 recruiting leases in eight states within its jurisdiction. The recruiting stations, which often occupy high-visibility sites to attract qualified candidates, are the locus of most new military careers. They are where recruiting interviews and testing take place, and where young applicants learn what Uncle Sam offers those who serve.

The leases call for constant maintenance and strong security for computers and other technical equipment. These are used to illustrate aspects of military life for potential recruits, including career options, training, travel opportunities, and benefits programs. They are also vital to putting recruits into the military system.

Students spend summer with Corps

Article and photo by
Marnah Woken
Europe District

Moving out of your comfort zone and being forced to adapt to new surroundings can be challenging. Eleven students from Historically Black Colleges and Universities (HBCU) took that challenge last summer in Europe District, participating in a three-month program offering opportunities to minorities in engineering.

"This program offers the opportunity for future minority engineers to get hands-on experience in the engineering field," said Elaine Lawson, Europe District Management Analyst and coordinator of the program. "We work very closely with AMIE, which stands for Advancing Minorities' Interests in Engineering. They in turn work with HBCU to recruit students for the program."

Europe District has participated in the program for the past four years. The U.S. Army Corps of Engineers recently signed a formal agreement with AMIE, bringing all Corps districts into the program.

AMIE is a nonprofit coalition of nine HBCU, according to AMIE Executive Director Marvin Bemby.

"The effort of AMIE is designed to increase the number of African-Americans entering the field of engineering," said Bemby. "We do this by impacting the infrastructure of the schools through partnerships, as well as developing relationships with private industry and government agencies such as the Corps."

Universities participating in the program include Florida A&M, Hampton, Howard, Morgan State, North Carolina A&T State, Prairie View A&M, Southern, Tennessee State, and Tuskegee.

During their time at the Corps, the students gain experience in the areas of installation support, planning and environmental, engineering, project management, field office work, information management, and computer-aided design and drafting.

"This has really broadened my horizons," said Joi Turner, 20, an electrical engineering major from Morgan State University. Turner worked in project management. "After my experience here at the Corps, I've decided I really like the business side of engineering."

"They put me to work right away," said Angele Rogers, 21, a civil engineering major from Howard University. Rogers worked in planning and environmental. "What I've learned this summer will really help me in school. Book knowledge is important -- but the experience I've gained here is invaluable."

"It's a good experience working in another country," said Darren Walls, 21, an architectural engineering major at North Carolina A&T State University. "I've learned about the different engineering and safety codes and I've also learned how to adapt to

a lot of different situations."

"There are so many different directions to go in engineering," said Jerome Myers, 21, a civil engineering major at Morgan State University. Myers worked in project management. "This program has given me more exposure and experience and it has helped me determine where I want to go and what I want to do."

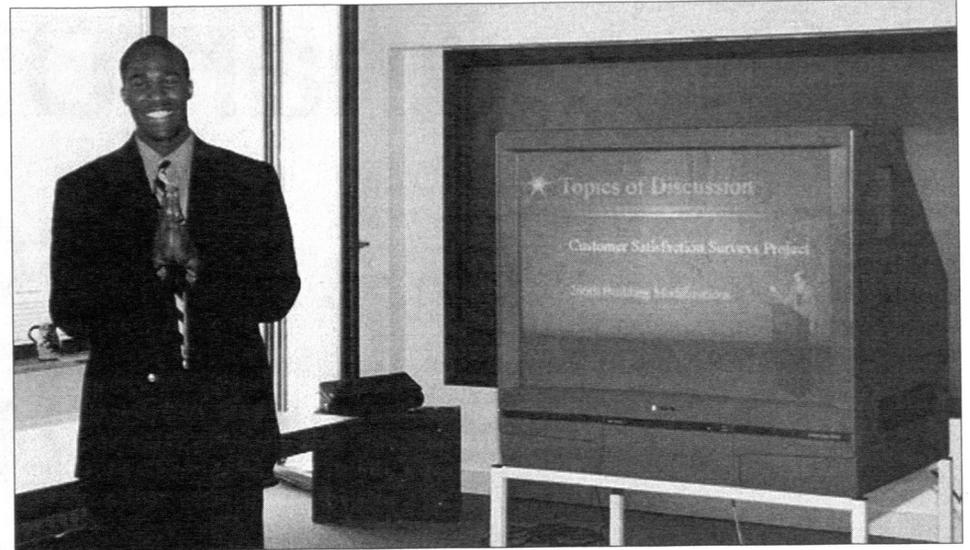
"This has made me more aware of what the real world of engineering is all about," said Gregory MacKenny, 21, an electrical engineering major at Morgan State University. MacKenny worked in Engineering Division.

"Being here has taught me a lot," said Solomon Caviness, 21, a civil engineering major at North Carolina A&T State University. Caviness worked in installation support. "I've had the opportunity to experience the business side of things and really see how it works."

Whether it's refining their interests or gaining valuable hands-on experience, Bemby believes the program offers numerous benefits.

"In a global-oriented society such as ours, this is a valuable and diverse experience for the students," Bemby said. "It gives them the opportunity to see what engineering is like in the real world, and it offers them the opportunity to refine their interests."

"Through this work experience, the students are also able to develop leadership and management skills,"



Solomon Caviness, a civil engineering major at North Carolina A&T State University, briefs Corps employees on his work with installation support.

Bemby said, "not necessarily people management skills, but project management skills."

Not only is the program highly beneficial to the students, but to the Corps as well, according to Bemby.

"The benefits to the Corps are an investment in the future," he said. "We expect some of the students to become employees of the Corps and, from a philosophical standpoint, it gives the Corps the opportunity to give back to the citizens of the country, particularly to those citizens who often times have not had these opportunities in the past."

Bemby commented that another benefit to the Corps is some short-

term relief to a heavy workload, a comment Lawson echoed. "Here at Europe District, we have a lot of work to do, so the benefits are really two-fold," said Lawson. "The students are learning and at the same time we're increasing our productivity."

Lawson believes the students bring new ideas and concepts to the Corps that energize the work environment.

"These future engineers help bring diversity to the Corps," Lawson said. "If we are to stay a competitive work force, we must ensure we have a diverse work force."

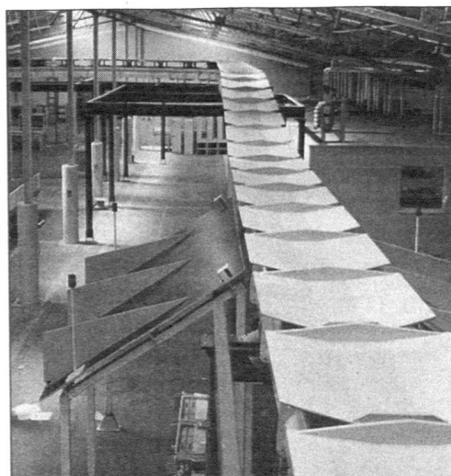
(Visit the AMIE Website at <http://www.morgan.edu/academic/special/amie/amie.htm>)

Corps updates military mail hub

Article and photo by
Marnah Woken
Europe District

If you think you handle a lot of paper, image handling 80,000 pounds of paper every day! And that's during a slow season.

The newly renovated Frankfurt Aerial Mail Terminal on Rhein-Main Air Base will soon be the central distribution center for all military mail in Europe. The grand opening was Oct. 6.



State-of-the-art wooden tilt trays and bins are used to sort mail at the renovated Frankfurt Aerial Mail Terminal at Rhein-Main Air Base.

"From a military mail standpoint, this is it," said Vernon Yowell, Operations Officer for the facility. "This is state-of-the-art. It's the largest military postal facility in the Department of Defense and the best thing that's happened to the mail business in 35 years."

The facility houses a state-of-the-art sorting system made of wooden tilt trays for noise reduction. The trays move on a conveyor belt, dropping the mail into 32 bins.

"With this new system, the sorting is done automatically so there's a lot less physical labor involved," said Yowell. "My employees won't have to stop dock loading to sort the mail. It's really going to save a lot of time."

Along with a state-of-the-art sorting system, the new facility uses a computerized mail tracking system.

"We're connected to the U.S. through a computerized airmail distribution system," said Yowell. "The bags are bar-coded for tracking. We'll be able to know exactly when they left the U.S. We process 40 tons of mail per day, which doubles during the holidays and contingency operations, so this new system is going to be a tremendous improvement in the way we do business."

The Air Force contracted the U.S.

Army Corps of Engineers' Europe District to complete the renovation project.

"This was a major renovation," said Lalit Wadhwa, Chief of Facilities Engineering Support Branch, Engineering Division at the Corps. "Europe District provided the concept, design, and supervisory inspections of the entire facility renovation."

Wadhwa added that the Corps hired a general contractor to complete the work which included asbestos abatement, roof repair, installing a break room, renovating toilets, installing a secure registered mail area, replacing the exterior metal shell, and upgrading the parking lot and surface drainage system.

Other work on the project included installing service opening mail chutes, an oil-fired heating system with chimney, a transformer station, an electrical lighting system, and automatic roll-up doors.

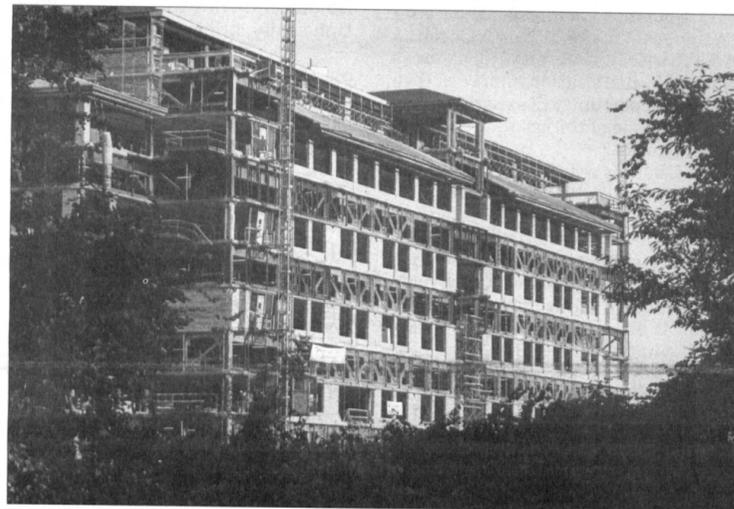
The \$2.4 million construction project was completed with zero cost growth and no time delays.

"The construction work took five-and-a-half months," said Wadhwa. "The total project took 12 months from the time the customer walked in the door with the design requirement to the final completion."

Savannah District readies bases for the next millenium

New Army hospital under construction

By Alicia Gregory
and Victoria L. White
Savannah District



Womack Army Hospital will offer 286 hospital beds and all major diagnostic and treatment centers.

The new Womack Army Medical Center (WAMC) will serve 160,000 patients at Fort Bragg, N.C. More than twice the size of the present hospital, the new WAMC costs \$250 million and will be the largest building on Fort Bragg with more than one million square feet. The complex will spread across 163 acres of woodland, where extra efforts to preserve the natural vegetation are being made during construction. WAMC was also designed to blend with the traditional buildings at Fort Bragg.

Opening in early 1999, the complex will house 287 hospital beds and is expected to have more than 2,000 medical professionals. It will include three distinctive structures.

The Clinic Mall Building incorporates the latest concepts in ambulatory facility design and is organized as a pair of two-story elements which flank the spacious clinic lobby. The Ancillary Building is the heart of the hospital, providing space for all major diagnostic and treatment centers. The Inpatient Tower will be the tallest structure, occupying the second through sixth floors. A modified "race track" design with central staff support spaces provide inpatient care services, while hospital staff and administrative offices are on the ground and first floors.

WAMC will also have innovations that improve service. For example, mechanical, electrical and communications equipment will be in a utility space between floors. This will allow maintenance work without interrupting hospital operation.

State-of-the-art medical technology, clinics for every medical specialty, and an efficient design will make the new WAMC one of the finest hospitals in the country. New services include cardiology, hematology-oncology, plastic surgery, complicated obstetrics, child and adolescent psychiatry, pulmonology, endocrinology, thoracic surgery, and a level II nurs-

ery for sick babies who do not require intensive care.

"We're really proud of what the new medical center and the new clinics are bringing to this area," said Lt. Col. Carmen Rinehart, chief of the Health Facilities Project Office, which oversees construction of all Army health facilities. "We're getting a state-of-the-art medical facility comparable to civilian hospitals. The 'open mall' layout facilitates patient flow. Patients come in the door and, if they need the pharmacy or lab services, they don't have to go from one end of the building all the way to the other or down in the basement."

Every medical facility on Fort Bragg will be replaced by the year 2000. Three neighborhood primary care clinics for soldiers, airmen and their families are also being built for easier access to health care, with the WAMC serving as a hub for specialized care. These clinics will also be designed and built by Savannah District. "Most needs will be treated at the clinics, so people will be sent to the hospital only for specialized care," said Rinehart.

Medical techniques and functions change rapidly, which was a top consideration in designing WAMC. The Health Facilities Project Office is con-

stantly reviewing the design and making changes.

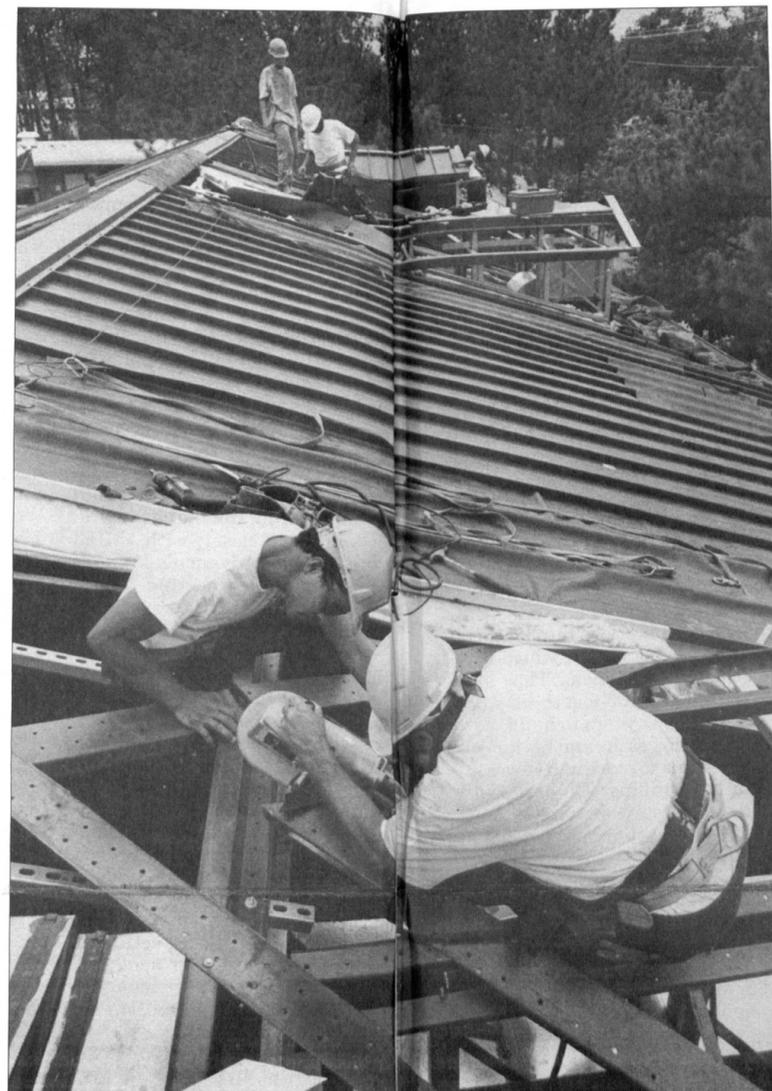
"With the medical mission changing so quickly from the time Womack was designed to the time the project is completed, you have to make changes up to the time you open the doors," said Allen Rowe, the district's resident engineer for the hospital's field office. "It will take nine months to a year for the staff to move in and install the equipment. We can use this time to fine-tune changes."

Coordinating the changes is facilitated by the district's field office, located in the same building with the customer, the Health Facilities Project Office.

"We have a wonderful relationship with the hospital field office," said Rinehart. "We get a wealth of information. We're sent basically everything to review, not just information that is medical-specific. And if we have concerns, we can voice them."

All of this works to upgrade the medical care at one of America's premier power-projection platforms.

"America's finest deserves the finest quality health care and I can't think of any project more valuable or more important than this hospital," said Savannah District Engineer Col. Grant M. Smith.



Contractors replace the roof on Building #31, one of the billets known as the Carolina Inn at Pope Air Force Base.

Inn's renovated interior belies unchanged facade

By Victoria L. White
Savannah District

The two buildings are typical of those at any military base: long, two-story brick with flat roofs, a predominant building style of 20 years ago.

But don't let the facades fool you. Airmen and civilians traveling to Pope Air Force Base, N.C., are pleasantly surprised when they check into the Carolina Inn. The buildings may be "retro" on the outside, but inside they're comparable to finer hotels.

"It's absolutely gorgeous," said Sayed Kamalbake, project engineer at Savannah District's Area Office on neighboring Fort Bragg, N.C. "The buildings have that plain brick exterior, but when you go inside, everything is modern with cherry wood furniture. All the amenities are modern."

The two buildings had old fixtures and plumbing, and inefficient heat-

ing and air conditioning. Renovation began at Pope's Base Civil Engineer (BCE) office, which designed the project and awarded the contract. It became a joint effort when the BCE gave the project to the area office.

"It turned out to be too big a project and they needed our help," Kamalbake said. "So we're managing the project and the contractor."

Since the structures were solid, renovation was more cost-effective than building a new facility. "They've been gutted right down to the sheet rock," Kamalbake said. "The buildings have all new plumbing, new fixtures, the ceilings were replaced, and the heating and air conditioning systems have all been upgraded."

Building 233, the first of the two, was completed in June. Building 231 will be finished in November.

"We get a lot of good comments from guests," said Tech. Sgt. Vernon Means, the Carolina Inn assistant manager. "They absolutely love it. I was happy during the whole renovation process because of the professionalism of everybody involved."

"They all worked together," Means said. "The Corps was very profes-

— Photos by Jonas Jordan, Savannah District —



Security cameras throughout the new child care development center at Pope Air Force Base provide childcare workers and parents with visual control at all times.

sional and stuck to every portion of the contract. They were thorough and really watched over everything the contractor did. They went through every room and checked everything.

"I've been in military lodging 15 years (here at Pope AFB for 12 years) and I've seen renovation projects before," said Means. "I couldn't be happier with the way this project has been handled by everybody. The Army, the Air Force, and the contractor all worked together and they've all been magnificent. Thanks to them, our airmen and their families have a beautiful facility to stay in when they come to Pope AFB. What a wonderful welcome to the base!"

New daycare center pleases staff, parents, kids

By Victoria L. White
Savannah District

Good daycare is difficult to find, but at Pope Air Force Base, N.C., infants through preschoolers (age 4) enjoy a new facility with the latest in security measures and a large playground at the new Childcare Development Center. Savannah District managed the design and construction of the \$2.3 million center.

"When you enter the main lobby,

there's a control desk and security cameras in every part of the building," said Lee Nelson, an architect with the Base Civil Engineer (BCE) Office. "All rooms in the facility have glass windows. Even the closets have glass windows so that caregivers have visual control at all times. It's tough designing a childcare center that meets all security requirements, but parents don't have to worry about their children here."

"We're very pleased," said Joy Tolley, Family Member Support Flight Chief. "It meets all requirements of the Air Force and exceeds our expectations. It's open and spacious and we have closet space for a change. I think the Department of Defense has really put children first now by giving them a safe, quality environment like this. Some of our caregivers have worked for private sector daycare and they say it doesn't hold up to these standards."

"It's beautiful, too," Nelson said. "The brick outside is really detailed and interesting. Inside, each room is color-coded for each age group, and the caregivers even wear those colors to help the children know where they're supposed to be. There's a central kitchen so food is cooked right there and brought to the children. They have a room where they eat and other rooms for play areas."

The daycare center can accommodate up to 168 children. It opened in

April and currently has 127 children in regular daycare and 24 in a preschool class for four year-olds.

"We're so thankful for the new facility," said Sandra Morrissey, Childcare Development Center Director. "The kids' attitudes are better and staff morale is better. The support from the Corps of Engineers has been unreal. They here just about every day after we moved in and took care of every little problem."

The facility has also passed the biggest test -- Mothers.

"I worked in the old building and the difference is incredible," said Lois Chapman. "We were so lucky to get my son, Joel, in here. He looks forward to daycare. It's such a new environment with everything bright and colorful. I'm happy with the facility and the care he gets."

Senior Airman Lolita Patterson, 43rd Supply Squadron, is new to Pope AFB and put her 3-year-old son, Scott Jr., and 2-year-old daughter, Janelle, into the center.

"It's so nice," Patterson said. "The playgrounds are wonderful with so many activities for the different age groups. I came from Fairchild AFB in Washington where the facility was okay, but this is much better. The security surveillance is great, too. I can stand in the lobby and see how my children are doing without them knowing I'm here. That's a great benefit."

Living history

Man relives Civil War

By Shari Odom
Galveston District

Weary soldiers slog 15 miles in pouring rain carrying all their food, clothes, tents, and rifles. One soldier wears out the soles of his shoes during the long trek. In a short time, they will face the enemy in the Civil War's Battle of Pleasant Hill in Louisiana.

But the year is 1997, and these men aren't really soldiers. They are members of a Civil War reenactment group.

Fred Anthamatten, chief of the Regulatory Enforcement Branch in Galveston District, is a member of the Galveston Lone Star Rifles, Company L of the First Texas Infantry Regiment, a Texas group that reenacts Civil War battles.

Anthamatten is a serious student of history, as are his wife, Mary, and their two children. He joined the group less than a year ago because of his interest in the Civil War era. He also owns a collection of Civil War artifacts which were recently displayed in the library in Texas City, Texas.

Anthamatten said there is a four-year cycle in re-enacting Civil War battles. During the first year of the cycle, it is 1861. The second year is 1862, and so on until the war is over. Each year, battles are reenacted on the anniversary of the historic event, and at the actual site.

"Some battle sites are national parks now," said Anthamatten. "They can't be used." When this happens, the battle is reenacted as close to the original location as possible.

But reenacting a Civil War battle means much more than just pretend-combat. It is near-total immersion in the feeling of that era. When going to a reenactment, reenactors dress in period clothing (including period undergarments), eat period food, carry period weapons and equipment, even sing period songs and listen to period music. Though Anthamatten purchased most of his clothing from sutlers (commercial suppliers who set up at reenactments), other reenactors make their own clothes. All clothes, whether purchased or hand-made, must be authentic to the era, right down to the thread.

"They even have authenticity checks," said Anthamatten. If any anachronism is on the person, it must be removed. No jewelry, except wedding bands, is permitted.

To join the Lone Star Rifles, Company L, Anthamatten was required to have certain items. Reenactment rules describe every detail -- a cadet gray Confederate army shell jacket with nine buttons, a wooden spoon, an Enfield 1853 three-band .58-cal. musket, and a two-inch belt, black with a Texas or serpentine buckle.

"All this can get kind of expensive, so we try to keep the transportation cost down by taking trains or renting vans to reach reenactment sites," said Anthamatten.

When going to battle, the Texas Regiment, to which Galveston's Company L belongs, participates in a campaign march up to 15 miles to the battlefield, carrying all their equipment.

At the reenactment, field commanders know the basic script of the battle. Other lower-ranking people must follow the field commanders' orders to know what to do.

The reenactment is fought as close as possible to how it really happened, but only specific engagements are reenacted, not entire battles. To reenact the entire battle would take great effort and a lot of time.

Each reenactor has a rank that must be earned, just like in a real army. They earn rank by participating and learning, through drill and camps of instruction, what was required of soldiers during the Civil War era, and they are tested on their knowledge.

Anthamatten is a private in the Texas First Regiment and plans on being a foot soldier the whole time. "It's just a hoot being in the ranks," he said.

On the battlefield, guns are fired (blanks, of course) at the right time, soldiers fall to the ground and fake death at the right time, and battles are won at the right time, by the right side.

There are two or three ways to decide who plays dead and when. "You either die when you shoot a black cartridge, when you run out of ammunition, or when the mood hits," Anthamatten said.

Once a reenactor dies, he must play dead for the remainder of the battle; there's no getting up and playing another person. "Sometimes people want to get wounded so they can watch what's going on," Anthamatten said.

Each battle reenactment lasts roughly half an hour and everyone must follow strict safety rules, such as no unauthorized or aggressive hand-to-hand or saber combat. The list of safety regulations is several pages long, "but most of it is common-sense stuff," Anthamatten said.

Other not-so-common-sense rules include period footwear, a canteen filled before battle, no rubber knives (they are all real, but must remain undrawn during combat), no attempts to take enemy flags (unless previously arranged), and no women dressed as women on the battlefield. Since a few women *did* fight in the Civil War dressed as men, the rules

state "women may portray combatants; however, reasonable effort must be made to disguise their gender."

Anthamatten recently participated in the reenactment of the Battle of Pleasant Hill in Louisiana. "I marched 15 miles in heavy rain, and the soles of my shoes came off," Anthamatten said.

His next adventure was the Battle of Sabine Pass and the Battle of Antietam. Since the Antietam battlefield is now a national park, a man hosted the reenactment on his 900-acre farm eight miles north of the site.

Anthamatten said that participating in reenacting the Battle of Antietam, the bloodiest single battle in American history, was exciting. There were more than 8,000 reenactors at the site from all over the country, but only two of Galveston's company survived.

Anthamatten plans to take part in the first Battle of Galveston reenactment next January. He noted that the Battle of Galveston was not large, but it was significant because Galveston was a major port. The battle took place when the Confederates tried to regain control of the port, which had been lost to Union troops. Company L hopes to make the Battle of Galveston an annual event to help keep the history alive.



Fred Anthamatten, a Civil War reenactor, immerses himself in "living history." (Photo courtesy of Galveston District)

Engineer takes skills to the mission fields

By Sara Decker
Little Rock District

Most people leave their jobs behind when they go on vacation, but not Craig Evans. Evans, a structural engineer in Little Rock District's Structures Section, spent his summer vacation putting his skills to work to bring relief to the Wayu Indians in the Guajira region of Colombia.

Fellowship Bible Church, where Evans is a member, coordinates the annual missionary trips with the South American Missions (SAM) agency.

The nine-member team left Arkansas on July 6 and arrived in Santa Marta, where they spent a week expanding a combination church/school by building a 60-by-20-foot porch, which covers where the students eat lunch. They also continued building a 50-by-100-foot three-story school which has taken six years to build.

Evans used engineering skills and his knowledge of structural details to place and cure concrete columns for the building. On past trips, he has designed a concrete water tower platform, and built a septic system and two small concrete block buildings.

Although this missionary trip was Evans' third to Colombia, it was his first in Santa Marta.

The last week of their stay, the team went inland to a village near Maicao. Maicao has a population of 60,000. Most of the surrounding villages, with populations of about 40, move as water resources are exhausted. Natives raise goats, chickens and a few cattle, since most of the wild game in the area is depleted.

A new schoolhouse had been built in Maicao and the group moved the original 20-by-16-foot schoolhouse 40 miles away to a village without one. The relocated schoolhouse will now serve more than 25 native children.

The team worked 12-hour days taking the schoolhouse apart, moving it, and reassembling it. In the evenings, they dined with their missionary host, eating pasta and rice.

After dinner, they would have prayer and devotional time, often sharing the reasons why they decided to come on the mission trip. Although the majority of Colombia is Catholic, the Indians have little understanding of the Bible and rely heavily on tribal customs.

"Conflicts are resolved with death," Evans said. "Men in the villages die between the ages of 17 and 29, thinking it's macho to shoot it out. They have no sense of value of human life."

Evans said that it was inspiring to stay with missionaries who live by faith every day in a seemingly hopeless situation. In a local church, eight pastors have been killed in two years for speaking out against the drug trade. The only thing the 20-member church can do is open the doors and pray, because church officials are reluctant to send another pastor to the area.

"I was stopped and interrogated by police with automatic weapons, because I was traveling with a Colombian between the villages while we were moving the school," said Evans. "The missionaries face many near-fatal encounters with the drug lords and other Colombians."

Cross-training lends broader view

By Lira Frye
New Orleans District

Competing in today's job market can be challenging and, as the number of government positions continues to decline, placement becomes even more competitive.

To deal with this, Eugene Tichner, Chief of Engineering Division and career program manager for CP-18 (engineers and scientists), said the district wanted to do something to increase the promotion potential of its work force.

"Many of our people spend their entire career in one discipline," Tichner said. "Although as a result we get very competent engineers, they get a narrow view of the world."

Driven by the desire to help scientists and engineers qualify for positions at higher levels, last year New Orleans District instituted a developmental (cross-training) program for GS/GM-13s in CP-18.

"We wanted to get out of the mold and pull in something completely different," Tichner said.

In August 1996, district officials selected nine GS/GM-13 engineer and scientists to move to positions in different divisions in the district for one year.

Making the move

All those who took part were volunteers.

"They had to be risk takers," said Robert Tisdale, deputy district engineer for project management. "It was a pretty gutsy move on the selectees' part." Tisdale said the participants were asked to volunteer blindly. They had no idea where they would be placed or what type of position they would be asked to handle.

"We wanted to give the participants a healthy understanding of what the other divisions do," Tisdale said. "They were moved into places we thought would give them maximum



Participants in their district's first cross-training program include (l-r) Chris Accardo, Bill Kaver, Tim Roth, Mike Park, Scott Clark, Fred Shilling and Burnell Thibodeaux. (Photo courtesy New Orleans District)

learning experience — not their daily regimen."

Results

Although each went through a six-to-eight week learning curve, Tisdale said they basically picked up where the previous person left off.

"We found that they picked their

new positions up very quickly," he said. "In the last six months, we've seen improvements and cross-pollination."

Tichner said he believed the developmental assignments were important for the participants' careers and made them viable candidates for different positions. Tichner also said he thought the program increased the

ability for technical competence and teamwork.

"If you have an opportunity to sit in someone else's desk for awhile, you're more sympathetic to their plight," Tichner said.

Participants' response

"The process has been a real learning experience," said Scott Clark, senior project manager. "I certainly have a different perspective on other district elements, even my own. I guess the expression 'walking in someone else's shoes' is appropriate here. I feel the cross-training gives the participants a much greater appreciation and bigger-picture image of the district and its workings."

Chris Accardo, chief, Environmental Projects section, had a similar experience.

"It has been positive in the sense that I have met new people and learned more about the district," Accardo said. "I have a much better feel for what Planning Division does and how they contribute to the district mission."

However, Accardo also had concerns. "Placing employees in foreign project manager and section chief roles has caused disruptions both internally and with outside customers," he said. "The inexperience factor can slow down some processes, and I'm aware of customers who have been a bit annoyed at the inconvenience this has caused."

Tichner said he's aware the learning curve may cause a few ripples in the system, but he believes the returns the district will realize outweighs the loss of productivity.

The program was so effective that it is continuing this year. By August, 12 engineers and scientists had requested assignments for this fiscal year, and will be in their new positions this month. The program was been expanded to include GS/GM 12-14s, and GS-11s subject to approval.

Vicksburg designs Indian burial site

By Karen Magruder
Vicksburg District

Many remains from Native American grave sites are in museums or private collections. Thanks to the Native American Graves Protection and Repatriation Act (NAGPRA), many of these will be returned for burial with dignity.

"The Indians lived in this country thousands of years before Europeans arrived," said Erwin Roemer, an archaeologist with Vicksburg District. "In the South, there's a high probability that some remains will be unearthed in the course of constructing projects, especially with large projects like a waterway."

The Corps encountered such re-

mains in building the Red River Waterway project linking Shreveport, La., to the Mississippi River. Seven burials were found south of Shreveport.

The remains belong to the Caddo Indian Tribe of Oklahoma. Meetings between the tribe and the district have resulted in a reburial site approved by both parties. The site, near Coushatta, La., will allow tribal elders to rebury their ancestors in the Caddo ancestral homeland.

"In discussions with the Caddo tribal leaders in Binger, Okla., we learned a great deal about customs and traditions, including the importance of site orientation, plant materials, and their heritage," said Joe Coulon, landscape architect.

Coulon used the information to de-

velop several concepts for the reburial site. "The minimal requirements of the law could have been met by trenching with a backhoe and reintering remains with a chain-link fence at the site," Roemer said. "But wouldn't you want your ancestors' remains treated with more respect?"

The design has four reburial areas representing Texas, Louisiana, Arkansas, and Oklahoma, the ancestral homeland of the Caddo. Each area will be built of flat paving stones on a sand base. The stones can be removed and replaced for reburial ceremonies.

A concrete walkway will connect the four areas. They will surround a three-foot-high symbolic ceremonial mound in the center of a 100-foot-square grassed site. The site will be

enclosed by a 32-inch-high concrete block wall. Other features include trees, groundcover, and benches.

The reburial site is not intended as a tourist stop on the Red River Waterway, but a religious ceremonial area for the Caddo Indian nation. "Because it isn't a tourist site, we wanted to limit access," Coulon said. "The best way to do that is to locate it far enough away from the parking lot that sightseers won't be interested in walking to the site. We felt it deserved the quiet solitude associated with a cemetery. We wanted a place where people could meditate and honor their ancestors."

Now that all parties have agreed on the concept, the project awaits funding.

Corps helps with 'safe kids' program

Article by Judy Marsicano
Photo by Deedra Dedman
Fort Worth District

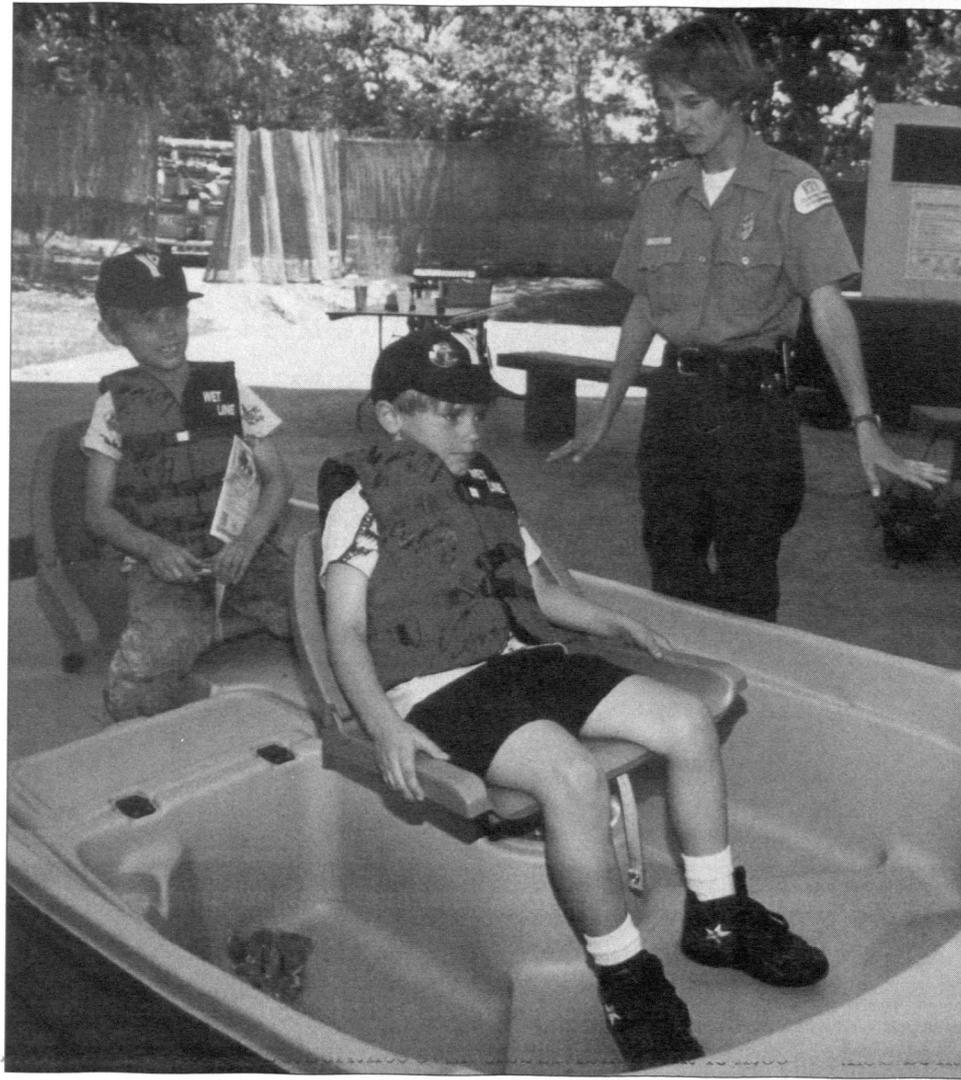
Last January in Tarrant County, Texas, an 11-month-old girl fell into a bucket of water and drowned. In April, an 8-month-old would have died the same way had someone not found her in time. A 2-year-old drowned in a bathtub while a younger sibling played beside her. Thirteen other children were resuscitated after they were found in swimming pools, bathtubs and hot tubs. In every situation, the child was left unsupervised by an adult.

Statistics like these occur every day across the country. But a group of profit and non-profit organizations in Tarrant County, including the U.S. Army Corps of Engineers, is reversing this trend by organizing a community-wide water safety program.

The group calls themselves the Tarrant County Water Safety Advisory Council, piggybacking on the county's SAFE KIDS Coalition. The council is made up of people from Fort Worth District, the Fort Worth-Tarrant County Health Departments, Cook Children's Medical Center, the American Red Cross, Texas Parks and Wildlife Department, the Fort Worth Fire Department, and four commercial businesses.

"This is a big-time public health issue for Tarrant County," said Susan Ball, a health planner for the county health department and co-chair of the council. "People think we're so far inland that water safety is not much of a concern, but look at our statistics. Our kids are drowning in open water, in mop buckets, in bathtubs and in backyard swimming pools. Every one of these fatalities was 100 percent preventable."

National statistics indicate that children ages 1 to 4 have the highest drowning rate. Seventy percent of preschoolers who drown are in the care of one or both parents when the drowning occurs, and 75 percent of



Becky St. John, a Corps ranger at Grapevine Lake, shows Jeremy and Timothy Hill how to wear life jackets at the "SAFE KIDS Gear Up" event.

those parents report they were away from their child less than five minutes.

Using the slogan, "Kids Aren't Waterproof," the advisory council is taking every opportunity to bring that message to children and their parents. Council members are sharing life-saving information, warning parents to keep close watch on their children when they are near water — whether it be a pool, lake, bathtub, or container. They also caution children about the dangers of water and

urge them to learn to swim.

The council staffed a booth and distributed water safety materials to audiences at the Main Street Festival in downtown Fort Worth, and at a Boat Regatta at Hurricane Harbor in Arlington, Texas. Both drew thousands of parents and their children.

Many families spent Mother's Day at the Fort Worth Zoo, participating in "SAFE KIDS Gear Up" sponsored by the SAFE KIDS Coalition during National Safety Kids Week. Children participated in seven lanes of

activities and interactive games on poison prevention; water safety; pedestrian, vehicle and bicycle safety; fire and gun safety; emergency response; and health and oral hygiene.

Eight-year-old Jeremy Hill and his 7-year-old brother, Timothy, from Dallas, climbed into a nine-foot bass boat in the council's water safety booth and learned how to put on life-jackets.

"I have to tighten it so it will fit like this," Jeremy said as he pulled on the belt. "If it's too loose, it's going to fall off and I'll drown." Jeremy's mother, Lisa, said he was starting swimming lessons the following week.

Becky St. John, a park ranger at Fort Worth District's Grapevine Lake, spoke to about 200 children on water safety throughout the event as they stepped into the boat.

"It really bothers me that, while I'm talking to them about the proper life-jacket for their size, they tell me they already wear those little floaty things, and I have to tell them those aren't good," she said. "That's a very scary thing to hear."

One of the most talked-about water safety give-aways for children's events this year has been the "water watcher" tag. Introduced by Liz Pulliam, vice-president of Pulliam Pools and a member of the council, the tag is waterproof and says, "While wearing this tag, I accept responsibility for guarding the pool to protect children from drowning. I will not leave the pool area without a replacement."

The tag was introduced in 1993 by the Children's Hospital of Orange County, Calif., and in two years contributed to a 50 percent reduction in child drownings.

"We distributed 5,000 of the tags in 1996, and we had another 10,000 printed this year," Pulliam said. "Since drowning is a silent death, the tag serves as a tangible reminder to parents to never leave their children alone."

Fourth-grader uses Corps tips, saves cousin

By Judy Marsicano
Fort Worth District

Using tips she learned in a Corps ranger's water safety class, a fourth-grader from Whitney, Texas, saved the life of her cousin at a family reunion recently.

Ten-year-old Malinda Tucker was standing on a fishing dock at Lake Leon, near Ranger, Texas, with eight other children. While they waited for the adults to prepare lunch at a nearby cabin, they did what most children do -- they got restless. Pretty soon, Chris Hughes, Malinda's eight-year-old cousin, began roughhousing with another cousin named Sam.

"I saw them horseplaying on the edge of the dock, and Sam had Chris in a tight hug," Tucker explained. "Chris was trying hard to get out of the hug and was pulling away, and when he did, he fell into the lake."

When Sam and the other children realized that Chris had fallen in, they ran to the cabin about 50 yards away to get help, leaving Tucker and Sam's sister, Stephanie, alone on the dock.

"Chris kept going under and he had his eyes closed so he wouldn't get water in them, and he was splashing and yelling for help," Tucker said.

She reacted quickly, remembering what to do from a water safety class recently taught at her school by a park ranger from the Army Corps of Engineers — *Reach or throw, or don't go!*

"The ranger said that if the person is too far away, to try to find a stick," Tucker said. "Chris was coming up a second time and I saw he wasn't that far away from me, so I got down on my knees and yelled, 'Grab my hand! Grab my hand!'"

Chris still had his eyes tightly closed and he went down a third time, Tucker said. "When he came back up, I yelled again for him to reach up and grab my hand and when he did, I grabbed both of his hands

and Stephanie helped me pull him out of the lake."

By the time the first of the adults arrived on the dock, Chris was out of danger, though a little shaken, wet, and cold. Tucker said she knew that if she jumped in to try to help him, they both would have drowned.

The Corps routinely conducts water safety classes for school-age children in hopes of having some impact on their behavior should a situation like Tucker's arise.

Park ranger Tim Horn, from Fort Worth District's Whitney Lake, was the ranger who taught Tucker's fourth-grade class.

"We like to target the younger kids with this life-saving information because they are most receptive to it, and because education is a growing process, we can build on it over a long period of time," said Horn. "Malinda's actions should make us all feel good because it shows that our efforts can and do make a difference."

Around the Corps

SES reassignments

Four Senior Executive Service members are being reassigned within the U.S. Army Corps of Engineers. The effective dates are being arranged.

William Brown Sr., Chief of Programs Division in the Directorate of Military Programs at headquarters, will become Deputy Director of Military Programs.

Stephen Browning, Director of Engineering and Technical Services in North Atlantic Division (NAD), will become Chief of Programs Management Division in the Directorate of Military Programs at headquarters.

Frank Oliva, Director of Programs Management in NAD, will become Director of Engineering and Technical Services in NAD.

Dr. William Roper, Assistant Director of Research & Development (Civil Works) in the Directorate of Research and Development at headquarters, will become Director of the Topographic Engineering Center at Fort Belvoir, Va.

Book to be published

The Rangers are America's commandos, and their training and mission are considered the toughest in the Army.

Maj. John Lock, Deputy District Engineer for Military programs in New York District, completed Ranger training in 1980, and has written a book about his experiences. *Coveted Black and Gold: The History and Training of the Modern United States Army Ranger* will be published by Pocket Books next spring.

The book has been recommended by retired Gen. Colin Powell, former Chairman of the Joint Chiefs of Staff. Powell wrote, "Major Lock has written a fascinating and informative history of the most elite of the Army's troops...A good read for any student of the warrior ethic."

Lock has also written a second book on the Rangers which will be published next spring. It is titled *To Fight With Intrepidity: The Early History of the United States Army Ranger*.

10 millionth visitor

On July 1 the Corps of Engineers' Lake Superior Maritime Visitor Center in Duluth, Minn., greeted its 10 millionth visitor.

A family from Anoka, Minn., took the honors. It was not clear exactly who was the 10 millionth person, since Steve and Mary Newhouse and their six children Sam, Micah, Anna, Katherine, Mark, and Joshua all arrived at the same time. They were enroute to their cabin on Lake Superior's north shore when they took a break from driving and visited the museum and Canal Park.

The Newhouses were greeted by Lt. Col. Thomas C. Haid of Detroit District, Visitor Center Director C. Patrick Labadie, and Lake Superior Marine Museum Association President Tom Clure.

A brief program followed the greeting. Duluth Mayor Gary Doty proclaimed July 1 Lake Superior Maritime Visitor Center Day. "This Corps of Engineers facility has been a significant part of the Lakewalk and Canal Park waterfront redevelopment projects," Doty said.

After participating in the commemoration, the Newhouses enjoyed the exhibits and surrounding Canal Park before continuing their trip. The museum opened in September 1973, first under St. Paul District, then under Detroit District in 1980.

Current visitation in the Lake Superior Maritime Visitor Center averages about 425,000 people annually and is one of the most-visited attractions in the Lake Superior basin. Its exhibits show modern and historic ships and shipping, cargoes, locks and connecting channels, commercial harbors, and

highlights the Corps of Engineers role in developing the Great Lakes region. There are more than 45 scale models of Great Lakes ships and Corps floating plant on display. Three full-size ship's cabins and a pilothouse give visitors the feeling of being on board various types of vessels.

Maps and charts of the harbor, an historic two-story steam engine from the former Corps tug *Essayons*, shipwreck artifacts, artifacts and memorabilia from Corps floating plant and Great Lakes fleets, and several audiovisual displays capture the region's maritime heritage.

Coastal America awards

Coastal America has presented its national awards to select members of its team, including several from the U.S. Army Corps of Engineers.

Coastal America is a coalition of 10 federal agencies, the Environmental Protection Agency, and the Executive Office of the President along with state, local, and private alliances to address environmental problems along our coasts.

Five projects and two teams have received the 1997 Partnership Awards, including Coastal America's Northeast and Southeast Regional Implementation teams that were recognized in ceremonies on August 12. Both teams are chaired by Corps of Engineers representatives -- William Hubbard from New England District, and Dennis Barnett of South Atlantic Division.

In a letter to the Director of Civil Works, Maj. Gen. Russell Fuhrman, Virginia Tippie, Director of Coastal America, said "through their leadership and commitment to our country's coastal resources, both of these individuals have contributed greatly to the success Coastal America has achieved in their regions. Clearly, Dennis and Bill exemplify the very best in government."

Barnett, Hubbard, and their team members also received a letter from Vice President Gore, who

wrote, "By applying different federal authorities and programs synergistically to natural resource and infrastructure issues, you are solving problems that would be intractable for one agency alone. This approach exemplifies the goal of this administration to reinvent government and better address the real needs of the country."

Damages prevented

By storing near-record amounts of water, the Corps of Engineers' dams and reservoirs on the Missouri River have prevented more than \$5 billion in damages this year.

"The tremendous amount of snow on the upper basin, and in the mountains of Wyoming and Montana, produced nearly twice the normal runoff," said Col. Mike Meuleners, Missouri River Region Deputy Commander. "By collecting that water in the spring and early summer and controlling releases throughout the year, hundreds of thousands of acres of farmland, thousands of homes and businesses, and dozens of cities, towns and villages were not flooded."

Capturing the huge runoff cut river stages by 6.5 feet in Bismarck, N.D.; 16.2 feet in Sioux City, Iowa; 13.1 feet in Omaha; nearly nine feet in St. Joseph, Mo.; 14.4 feet in Kansas City; and 8.6 feet in Hermann, Mo.

About \$4 billion of the flood damages prevented were in major industrial and commercial areas of Kansas City, Mo., and Kansas City, Kan. Other damages prevented were \$143 million in Bismarck, \$35 million in Pierre, and \$111 million in Dakota Dunes S.D., and Sioux City. The major metropolitan area around Omaha and Council Bluffs, Iowa, were saved \$330 million.

"Without the dams, the river would have spread from bluff-to-bluff in many areas in April and again in June," said Meuleners. "The devastation in the basin would have been terrible."

70-year-old gate attendant uses CPR, saves teenager

By Carla Blalock
Wilmington District

You're never too old to be a hero.

Shelley Chapman is 70 years old, and she has been recognized by the Kerr Lake Safety Council and Wilmington District for performing cardiopulmonary resuscitation (CPR) on a 17-year-old at Longwood Campground, possibly saving his life.

The near-drowning occurred on June 1 at the Corps-run facility in North Carolina at about 5:45 p.m. The teenager dove into a shallow portion of the lake head-first, struck bottom, and was knocked unconscious. Two of his friends ran to the gate attendant station to report the incident and call for help.

Chapman is a gate attendant who works under contract for the Corps during the summer. The other attendants called 911, and Chapman ran to the lake where friends of the teenager had pulled him ashore. Chapman checked for pulse and breathing and, finding none, immediately began CPR.

Chapman was timed doing CPR for three minutes when she realized the teenager had started breathing again.

"I kept saying, 'Can you hear me?'" said Chapman. "Then he moaned and water started coming out of his mouth."

Rescue units arrived with two Corps rangers. The

teenager was taken to Duke Medical Center in Durham, N.C., where he recovered fully.

"I don't take credit for it," Chapman said. "I truly believe it was God that did it."

Chapman said that when she was on her way to the teenager, she asked God to help her, and felt secure that he heard her when a loud clap of thunder boomed across the sky immediately after her prayer.

For her actions, Chapman was honored on June 10 at the Resource Management Office in Boydton, Va. She told the group that her husband has had health problems in the past and, on her doctor's advice, she got certified in CPR last winter.

"I never dreamed I would ever need it," she said.



Shelley Chapman, a gatekeeper at Kerr Lake, saved a drowning teen. (Photo courtesy of Wilmington District)

Partnership tests long-lived concrete

By Jennifer King
Waterways Experiment Station

The tiny piece of plastic measures just 50mm long (1.96 inches) and .63mm (.024 inch) in diameter, but recent experiments suggest it could revolutionize future travel. The Waterways Experiment Station (WES) has been working with 3M Company under the Construction Productivity Advancement Research (CPAR) Program to develop a new fiber-reinforced concrete (FRC) system.

FRC is concrete mixed with some type of fiber to provide internal reinforcement. The fibers can be numerous materials, including steel, plastic, fiberglass, or nylon. 3M Company developed a new type of fiber made of polyolefin plastic, and designed a unique delivery system that enables a higher volume of fibers to be mixed in the concrete.

The fibers are bundled, wrapped in paper tape, and sealed with water-soluble glue. After the concrete is mixed, bundles of these tape-encased fibers are put in the mix. As the glue dissolves, the bundles of fibers burst open and distribute throughout the concrete mixture.

These new fibers are mixed at a rate of 15 lbs. per cubic meter, well over the conventional rate of 0.9-1.8 lbs. per cubic meter.

"The bundles don't break at the same time," said WES engineer Ed O'Neil. "Because the exposure of each bundle to the water and mixer agitation is different, the cellulose tape dissolves at different rates and distributes the fibers into the mixture in a timed-release fashion. This technique allows more fibers to be charged into each cubic meter of concrete."

However, the concrete must be mixed well for this procedure to work.

"Certain fibers can lump together and may not distribute well without proper charging and mixing procedures," said Billy Neeley, WES principal investigator for the 3M CPAR project. "If these fibers are mixed correctly in the concrete, these problems are eliminated."

The program

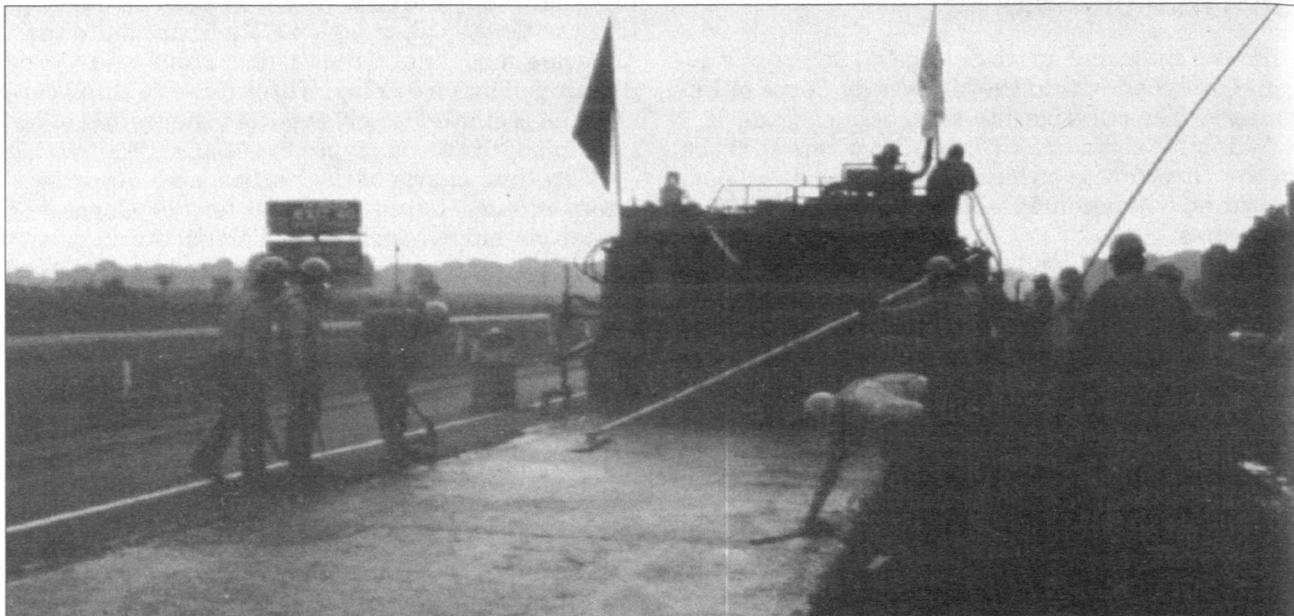
The CPAR Program was designed to help improve the productivity of the U.S. construction industry and benefit Corps mission accomplishment. CPAR projects are based on ideas from industry. A Corps research and development laboratory collaborates on the work and shares the cost.

New CPAR projects have not been funded since fiscal year 1995, but work is continuing on completing previously funded projects.

Neeley believes this project has helped the U.S. construction industry, the Corps, and WES. "We like to think we stay near the forefront of technology and find new solutions to problems," he said. "This project gave us the opportunity to be among the first to evaluate this new technology. For the first time, we have a synthetic fiber that can be added to a concrete mixture in a volume high enough to significantly improve the concrete's flexural toughness and impact resistance. With 3M polyolefin fibers, these properties can be similar to concrete containing steel fibers."

The general population benefits as well. When this new FRC is used in roads and other pavements, there are advantages over concretes reinforced with steel. After these concrete surfaces are completed, there are usually some fibers sticking up through the pavement surface. These plastic fibers will not puncture tires like steel fibers might.

Another advantage is noteworthy in the northern U.S. where snow and ice is plentiful. The salt used for de-icing roads often corrodes steel reinforced concrete. But the polyolefin fibers would not corrode when subjected to salt. This would decrease the repair work done on the roads, saving taxpayer money



The large-scale demonstration project of the fiber-reinforced concrete is 610 meters long on Interstate 20 in Mississippi. (Photo courtesy of Waterways Experiment Station)

that would be spent on maintenance work.

This type of FRC can be used for whitetopping, ultra-thin whitetopping, or full-depth pavements. Whitetopping is a layer of concrete applied to existing asphalt pavement. Ultra-thin whitetopping is a layer of concrete two-to-four inches thick used at intersections where heavy traffic causes ruts.

3M Company had already begun work with this new fiber for both applications before its partnership with WES beginning in 1994.

"3M had done significant research before WES got involved," said Neeley. "Much of their research had been with the South Dakota School of Mines and Technology and the South Dakota Department of Transportation (DoT). The first year of the CPAR partnership, the lab concentrated on verifying existing 3M data. Almost 100 mixtures were evaluated. A small driveway pavement section of the FRC was placed here at the WES Structures Laboratory as a trial demonstration. We evaluated the concrete mixtures for numerous fresh and hardened properties. The second year, we evaluated fewer mixtures but had an expanded list of fresh and hardened properties."

Final stage

The partnership is now in its third and final year.

"We reached a milestone this year with a large-scale demonstration," Neeley said. "We proposed the project to the Mississippi DoT, who got the Mississippi Concrete Industries Association involved. Due to the interest of the Mississippi DoT and the Mississippi Concrete Industries Association, the project doubled in size from that originally proposed by WES."

"The test section was a 1,220 meter lane (1,334.2 yards) of severely rutted asphalt on Interstate 20 between Edwards and Bolton, Miss.," Neeley said. "FRC with the 3M polyolefin fibers was placed in half of the test section. The entire project was planned and executed in less than one year."

WES did quality control during the placement of the test section. The section is 610 meters (667.1 yards) long, 100 millimeters (3.93 inches) deep, and 3.7 meters (4.04 feet) wide. The only variable is the spacing of transverse control joints at 1.8 meters (1.96 yards), 4.6 meters (5.03 yards), 7.6 meters (8.31 yards), and 12.2 meters (13.34 yards). These are done to control cracks as the concrete dries and shrinks.

There were other issues to consider in the placement. The Mississippi DoT wanted the road reopened to traffic 30 hours after the placement. The

strength requirement was 25 pounds per square inch before traffic could be reopened. The placement met both specifications.

"To the best of our knowledge, this is the most severe test of whitetopping to be used on a roadbed," Neeley said. "One reason is the volume of traffic. I-20 is heavily traveled, and a high percentage of that traffic is 18-wheelers with heavy axle loads."

Safety

There are also safety benefits from using fiber-reinforced concrete.

"In Mississippi, much of this interstate is paved with asphalt," O'Neil said in his article. "While asphalt is a good pavement material, the extremely hot temperatures during Mississippi summers, coupled with the heavy axle loads of the high truck traffic have produced rutted and shoved sections of the pavement. They are particularly dangerous after a rainstorm when the ruts become troughs filled with water trapped on the pavement surface."

The test roadbed was put down during the last week of August, and the Mississippi DoT has been making weekly inspections since then.

"Everyone involved felt the placement went well," Neeley said. "The Mississippi DoT is pleased with the product and the quality of the placement. The contractor was pleased with the way the product placed. We are now in a monitoring mode that will last about six months until completion of the project. If it performs well and lasts longer than traditional asphalt pavements and other FRCs, then we will save taxpayer money during the life of the pavement, even though the initial cost is higher."

The FRC using the 3M fibers has other advantages over other FRC. A thinner section of this material can be used because the larger number of fibers in the concrete adds flexural toughness.

The control joints in the concrete can be spaced wider apart. This could save money in the northern U.S. because the salt used in de-icing can seep down in the joints. To prevent this, the joints must be sealed every few years. If the joints are further apart, there are fewer to seal, and maintenance costs are lower.

The Mississippi demonstration was the last of a series during the CPAR project. The 3M fiber and fiber delivery system have been tested on road sections and bridge decks in Virginia, South Dakota, and Minnesota. It has also been tested for waste storage pavement slabs and electric utility vaults in Minnesota.