

Tsunami relief efforts continue in SE Asia

By Dennis Bohannon
Pacific Ocean Division

Pacific Ocean Division (POD) continues to respond to relief and reconstruction efforts in Thailand, Sri Lanka, and Indonesia as part of a Participating Agency Service Agreement (PASA) with the U.S. Agency for International Development (USAID).

Two teams from POD's Far East District (FED) and Honolulu District formed and deployed to the Far East in late February. John Emmerson, Program Manager Forward for the FED Support Team in Sri Lanka, said the onsite team members were initially Hank Miyamoto, team leader and sanitary engineer; Potong Bhramayana, cost and civil engineer; Ed Flint, geo-technical civil engineer; and Eric Sugiyama, structural engineer.

Emmerson said the immediate challenge was getting to the sites. The team's initial intent was to break into two groups. One group would go east to assess a bridge and water and wastewater needs at Arugam Bay in Sri Lanka. The second group would travel south and assess the vocational training campuses and fishery harbor projects.

Sri Lanka

The fishery harbors were at Hikkaduwa, Mirssa, and Dondra. Emmerson noted that parts of Sri Lanka have been in political turmoil for decades. He said, "There were many military checkpoints for the team that traveled to the east," and on the days they intended to travel north along the coast from Arugam Bay, demonstrations kept the team in the east from traveling.

Emmerson said despite some travel difficulties, the deployment was successful.

"I'm proud of how well the team worked together," said Hank Miyamoto. "We all experienced a great



A single home is all that remains of Banda Aceh in Indonesia. (Photo by Petty Officer 1st Class John Yoder, U.S. Navy)

deal of professional satisfaction."

The team worked with a variety of government organizations that included the Road Development Authority, the National Water and Drainage Board, the Ceylon Fishery Harbour Corporation, and the Vocational Training Authority. They were able to collect data, verify conditions, establish whether their assumptions about the work were correct or not, and coordinate proposed scope and costs for USAID's signature projects. The projects, which will employ Sri Lanka Building Code and Design Standards, totaled \$35.5 million.

Assessments and projects. The team's assessments included a two-lane 600-meter (1,968 foot) bridge and a new bypass road at Arugam Bay, 20 kilometers (12.4 miles) of road repairs in Mutur, water treatment and distribution, and wastewater treatment after collection of the wastewater from Pottuvi. The systems include two 250,000-gallon

Continued on page three



Before and after satellite photos show the devastation caused by the tsunami. (Photos courtesy of David Wong)

Woodley confirmed as ASA(CW)

John Paul Woodley, Jr. was unanimously confirmed by the Senate to be the Assistant Secretary of the Army (Civil Works) (ASA(CW)) on May 12. Woodley is the 10th ASA(CW) to serve since the position was established 30 years ago.

In this position, Woodley oversees the U.S. Army Corps of Engineers' execution of the Army's Civil Works program for conservation and development of the national water resources, including flood control, navigation, shore protection, and other related purposes.

In addition, the ASA(CW) is responsible for overseeing the budget of the Arlington National Cemetery and the Soldiers' and Airmen's Home National Cemetery.

Lastly, in coordination with the Army Deputy Chief of Staff for Operations, the ASA(CW) is responsible for directing the foreign activities of the Corps, except those foreign activities that are exclusively in support of U.S. military forces overseas.

Before his appointment as the ASA(CW), Woodley served as the Assistant Deputy Undersecretary of Defense (Environment). In this capacity, he oversaw the defense environmental program, encompassing both environmental restoration and compliance, and pollution prevention efforts.

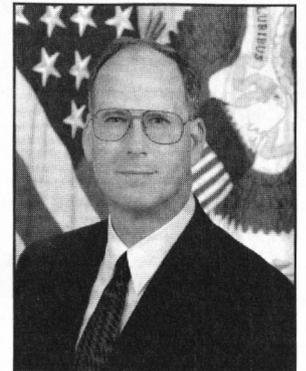
Woodley was also the principal advisor to the Secretary of Defense on environmental, safety, and occupational health policy and programs.

Before appointment as the Assistant Deputy Undersecretary of Defense (Environment), Woodley served as Secretary of Natural Resources in the Cabinet of Virginia Governor Jim Gilmore from January 1998 until October 2001.

Woodley also served as Deputy Attorney General of Virginia for Government Operations beginning in 1994.

Woodley attended Washington & Lee University in Lexington, Va., on an Army ROTC scholarship. He received a Bachelor of Arts degree from Washington & Lee in 1974, and was elected to Phi Beta Kappa. Woodley also attended the Law School at Washington & Lee, where he received his juris doctor degree cum laude in 1977.

Woodley served on active duty with the U.S. Army Judge Advocate General's Corps 1979-85, and retired from the Army Reserve in August 2003 as a lieutenant colonel.



John Paul Woodley, Jr.

Insights

Remember to give thanks on patriotic holidays

By Col. Mark Fentress
Chaplain, U.S. Army Corps of Engineers

Fred Bauer, the noted devotional writer, once said, "One of God's most thoughtful gifts to His children is memory." In May we celebrated Memorial Day, a national day of remembrance, and in a few weeks we will celebrate the Fourth of July. On both of these holidays, all liberty-loving Americans should use the gift of memory to give thanks to Almighty God for our beloved homeland, and for those selfless heroes who served and died in the defense of our nation.

There were hundreds of patriotic ceremonies, speeches, and observances all over America on Memorial Day, and there will be many more on July 4. All are intended to teach us something about the sacrificial meaning of patriotism, freedom, courage, loyalty, honor, and selfless service.

Unfortunately, many of us are slow learners. We get distracted very easily. In the midst of our holiday cookouts or picnics or fireworks, we often fail to give a first, much less a second, thought to these

selfless heroes who paid the very expensive down payment for our freedom with their lives.

I'm not saying that we shouldn't have a good time with our families and friends on Memorial Day weekend, or on July 4, or any of our other patriotic holidays. I always have a great time celebrating with my family and friends. All I'm advocating is that we take a few moments in the midst of the festivities to *remember* — to either say a prayer for our fallen comrades and their families, or pay homage to the American flag and the legacy of selfless service that it represents.

Or, just remember that liberty was born a twin, and that twin is loyalty. For without a selfless sense of loyalty, liberty and freedom are a lost cause.

Prayer — Eternal God, Creator of years, of centuries, we remember with compassion those who have died serving our country in combat, who made that priceless down payment for our freedom and nation. May their loved-ones receive Your promise of "Blessed are those that mourn, for they shall be comforted." And may those of us who live on to carry forward the



torch of freedom be prepared and ready to make the next payment for America's freedom. We especially pray for Your protection upon our military and civilian comrades serving downrange in harm's way; and for Your watch care and strength to be upon their families. Now grant us Your blessing upon our nation and its people. God Bless America! — **Amen.**

May all Americans who are the beneficiaries of those who have gone before us and who made the ultimate sacrifice, never forget how blessed, fortunate, and lucky we are to live in the greatest nation on the face of the Earth...America, "the land of the free, and the home of the brave."

In faith and friendship,
Chaplain Mark.

(The opinions in this article are those of the writer and do not reflect the official policy or position of the U.S. Army Corps of Engineers, the U.S. Army, the Department of Defense, or the U.S. government.)

Soo Locks has served for 150 years

By Casandra Brewster
Detroit District

This month, one of the wonders of engineering celebrates its 150th anniversary, and the vital role it plays in our nation's past and future.

Operated and maintained by Detroit District, the Soo Locks will celebrate this landmark occasion with an event-packed month centering around Engineers Day on June 24. This huge anniversary party will not only look to the history of the locks, but also ahead to its future on the Great Lakes.

Water elevator

Soo Locks is located at Sault Ste. Marie, Mich., on the St. Mary's River. The 63-mile river drops 21 feet from Lake Superior to Lakes Huron and Michigan. Most of this drop occurs at the St. Mary's Rapids, also referred to as the St. Mary's Falls.

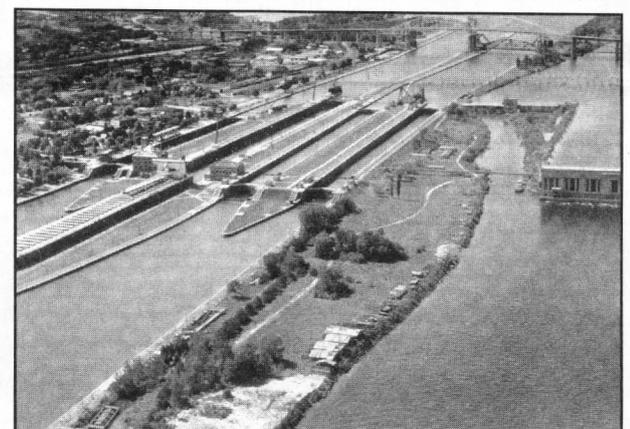
Soo Locks works as a "water elevator" to either lift or lower huge freighters and other lake vessels between the two bodies of water. This water elevator consists of two canals and four locks — Davis Lock, Poe Lock, MacArthur Lock, and the Sabin Lock (closed) — that allow vessels to many types and sizes to safely traverse the waters between the Great Lakes. Displays inside the Soo Locks Visitor Center show this elevator principle to the public.

History

St. Mary's River, the only water connection between Lake Superior and the other Great Lakes, is a natural barrier to vessel navigation, making it necessary to build the earliest lock project, the St. Mary's Falls Ship Canal. Before construction of this canal, the Ojibway (Chippewa) Indians would carry their



At left is a drawing of the first Soo Lock. At right is an aerial photo of the modern facility. (Art and Photo from the Digital Visual Library)



canoes around the rapids to reach Lake Superior.

As European pioneers arrived, creating larger settlements with increased trading, the need for larger boats grew. It became necessary to unload the boats, haul the cargo around the rapids in wagons, and then reload alternate boats on the other side. The alternative was to push and drag the vessels along greased timbers to get them through the shipping lane. This process cost valuable time, sometimes up to three months.

In the late 1700s a Canadian company built a lock on the Canadian side of the river, which was destroyed in the War of 1812. Then a private American company built locks on the U.S. side of the river in 1853. These locks were turned over to Michigan in 1855 and then designated the State Locks. Although the state charged a lockage toll, commerce grew and the locks became important on a national level.

In 1881 the locks were transferred to the U.S. gov-

ernment, giving jurisdiction to the U.S. Army Corps of Engineers. The Corps operates the locks toll-free to any vessel passing through the St. Mary's Falls Canal.

Today

More than 11,000 vessels carrying more than 90 million tons of cargo pass through Soo Locks every year. Many different types of vessels lock through the system varying in size from small passenger vessels and workboats to 1,000-foot ships carrying more than 72,000 tons of freight in a single load. Most cargo contained in these ships is iron ore, coal, grain, or stone.

The channels through the St. Marys River are maintained at a maximum draft of 25.5 feet at low water. When lake levels are above low water aver-

Continued on next page



tsunami

Continued from page one

water tanks, 4,000 cubic meter per-day wastewater treatment plants, and collection systems.

Eight schools, all part of the country's Vocational Training Facilities, were assessed, including repairing, rebuilding, or relocating 23 facilities, labs, lecture halls, workshops, equipment, plus technical assistance.

Emmerson said, "We want to provide facilities that include green construction environmental standards and all vocational training equipment that the U.S. is proud to build, ones that can be used as models for future schools that may be built."

Other significant projects include three small fishery boat harbors, coastal zone management, and bringing new facilities and technologies to the harbor area. The harbors consisted of the 350-boat harbor at Hikkaduwa, a harbor for 300 small boats at Mirissa, and the Dondra Fishery small boat harbor.

Harbors. Repair and construction assessments at each of the three harbors include:

- Breakwater repairs.
- Dredging and new breakwater construction at a channel entrance.
- Repair and new construction of wharfs.
- Construction of floating docks, a new 80-ton capacity slipway, and dry-docks at each harbor.
- New or repaired boat motor repair facilities.
- Fish processing and storage facilities with 50-ton capacity ice plant and flash freeze capability.
- New water and waste water treatment facilities at each harbor.
- New fuel stations at each harbor with two 8,000-gallon tanks.
- Repaired or new net mending buildings.
- New administration or community buildings, fish auction facilities, harbor master buildings, canteens, and sales outlets.
- Security improvements.
- A variety of lighting, gating, pavement, and facilities repairs.
- An environmental assessment will be conducted in compliance with USAID regulations for all the projects.

Challenges. Emmerson said that professional challenges lay ahead.

"The most challenging will be meeting the customer's expectations and time schedules." He said this is particularly challenging in view of the existing circumstances. "In Sri Lanka, there is a short-



Rebuilding the coast road and bridges southwest from Banda Aceh will be USAID's signature project in Indonesia. (Photo by David Wong)

age of skilled labor and sand for aggregate. Both are essential to any project. There are a lot of other international organizations that will soon be competing for those resources. The challenge is in getting ahead of other donor countries to ensure we are first in line to get people and materials."

Nonetheless, Emmerson notes, "We hope to be back in Sri Lanka in September for a groundbreaking ceremony for all the projects."

Devastation. Emmerson said that the most difficult part was witnessing the pain and devastation along the countryside. "More than 40,000 people in Sri Lanka lost their lives as a result of the tsunami, some 1,200 people on one train alone. We passed that train. A lot of the areas we visited were fishing communities. We saw a lot of fishermen who went out one day, only to return to find their entire families had been wiped out. It is pretty sobering."

Indonesia

In Indonesia the initial emphasis was on the coastal road and bridges from Banda Aceh southwest along the Indonesia Coast.

Signature project. The Honolulu Support Team's primary task was to provide a scope of work and cost estimate for USAID's 'signature infrastructure' project – replacing a road from Banda Aceh south on the western side of Sumatra. The project included 240 kilometers (148 miles) of urban, mountain, marshland, and flat terrain roads, replacing some 110 water crossings and culverts with four or five major bridges, and environmental documentation for the road project.

Glowing success. Rod Markuten, project manager and construction engineer on the Indonesian Team, termed the efforts "a glowing success" in that the efforts were well coordinated and the cooperation and support of USAID representatives was excellent.

"We were able to gather all the information we needed while we were there," Markuten said. "We had a lot of luck meeting with the people we needed to see. Everything just sort of fell into place."

Other members of the team included team leader Eric Kokum; Ray Kong, geo-tech engineer; David Wong, structural engineer; and Ron Pang, cost engineer. They arrived in Jakarta, Indonesia Feb. 23 for a one-month temporary duty assignment. While there, the team was provided daily reach-back support from both Honolulu District and POD.

Markuten said the team spent considerable time collecting information both on the ground looking over the roadway, and in the air documenting the impassable areas from helicopter.

Challenges. Markuten cited "limited time" and "getting the reconstruction contracts in place and the work started" as the biggest challenge to the engineers that will follow. He said "Manpower could be a challenge if we get into competition with all the other work needed there. In all, officials are estimating at least \$4.5 billion worth of work is required in the region. Only a fraction of that is represented by the Corps' road and bridge estimate." He noted that dozens of donor countries would be vying for materials and manpower.

Destruction. Markuten, like many other team members was taken aback by the tsunami's destruction. He said that although the people are recovering, "Through the pictures you can't get a true feeling for what happened there." He said that during the inspections he saw, "In some areas complete lanes of road fell away. In other areas, bridges just seemed to lead to nowhere. It was hard to see where the bridge once connected to."

Second PASA

In April, the Corps signed a second PASA with USAID. This second agreement provided additional funding and extended the timeframe for the Corps to provide technical assistance. As part of this agreement, the Corps will develop a technical scope of work for the design of the road from Banda Aceh to Malabo in Indonesia's Aceh Province, prepare an environmental assessment for the road, and provide a four-person technical team to work on-site in Indonesia for about four months.

Soo Locks

Continued from previous page

ages, larger ships take advantage of the deeper water and load up to an additional 200 tons of cargo per inch of additional draft.

The Poe Lock, the largest of the four locks, was rebuilt in 1968 to accommodate 1,000-foot vessels. It took six years to build and is the only lock ever rebuilt over an existing lock between two operating locks.

Also within the locks system is the U.S. Hydroelectric Power Plant, just north of the locks. It generates more than 150 million kilowatt-hours of electrical power each year to operate the locks. Whatever power is not used at the locks is distributed to homes and businesses in Sault. Ste. Marie and surrounding communities.

The future

In the early days, lock gates were opened manually. Now the gates are opened with the push of a button. Also, the Corps has plans to replace the Davis and Sabin Locks with a larger state-of-the-art lock, similar to the Poe Lock, to assist in handling the larger number of the 1,000-foot freighters within the Great Lakes fleet. The new lock will be the first lock built at the site since 1968.



Visitors to Soo Locks get to see Great Lakes freighters nearly close enough to touch as they transit the lock. (Photo courtesy of Detroit District)

Celebration

The Soo Locks have been a draw for boat watchers for years. At the locks you can view the ships from various vantage points, including observation platforms at Soo Locks Park, part of the Detroit District's Soo Area Office. Beside this park is the Soo Locks Visitors Center, which features history highlights and operations of the locks. Special anniversary ex-



The fourth lock at Soo Locks was built in 1917. Great Lakes freighters have changed a lot in 88 years. (Photo courtesy of Detroit District)

hibits are slated for the sesquicentennial party.

This year the hours of the Soo Locks open house have been extended from 10 a.m. to 6 p.m., so visitors may watch as freighters move through one of the busiest lock systems in the world.

As part of the celebration, the Corps will provide free access to cross the locks, various military displays, and a variety of other events during traditional Engineer Day, and throughout this summer.

Underwater archeology traces Wilmington's past

Article and Photos
By Hank Heusinkveld
Wilmington District

On the opposite side of the Cape Fear River from Wilmington's waterfront are piles of debris decades old. Wooden posts protrude from the riverbank at low tide, and rusting hunks of metal from a boat or barge are scattered about. It might look like ordinary junk, but to maritime historians these relics are windows into the history of Wilmington, N.C.

However, there are more pieces to the maritime historic puzzle that you can't see. Up and down the Cape Fear on the river bottom are remnants that tell even more about the history and economic development of the Port City. Wilmington District archaeologist Richard Kimmel oversees a unique mission that's a part of the district's Wilmington Harbor Deepening Project.

Throughout the areas under study for navigation improvements such as channel widening and deepening, Kimmel and his contract underwater archaeology team look for items that might have historical value to North Carolina. By using sophisticated sonar equipment they can "see" through the Cape Fear's brackish water for items that might have historical value.

Though they rely heavily on technology, Kimmel said they also must rely on public records...and even gut instinct.

"Larger vessels were insured, so if it went down it usually was reported in the newspapers," he said. "So, that's the first place we start. Then we do a magnetometer survey that helps us find anything with iron. Anything that's sticking above the bottom we'll find with sonar. The sonar, set to proper frequencies, will find most items. We then can determine visually whether it's a workboat or debris that's broken away from a dock."

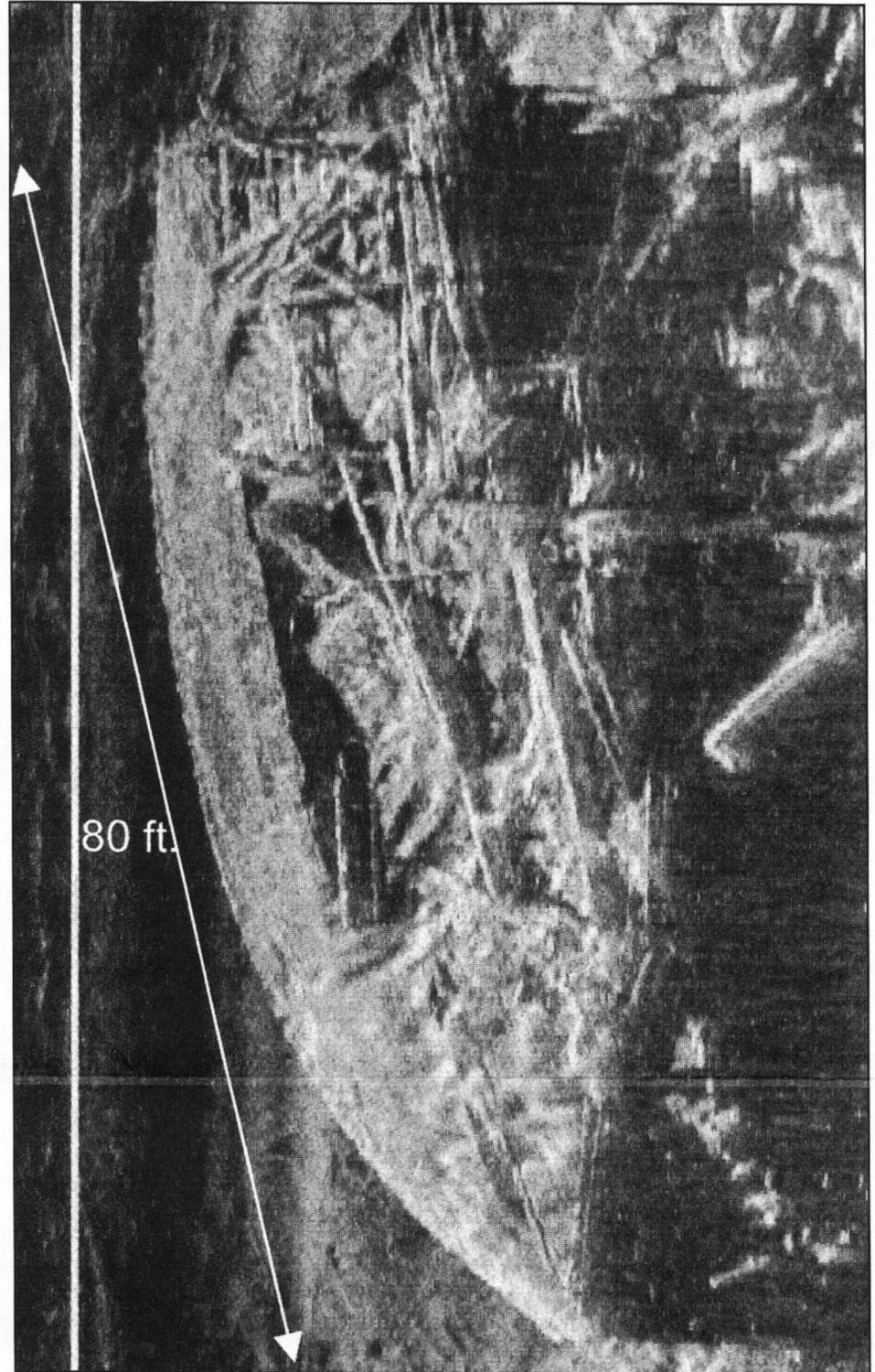
Kimmel said that during the past 25 years or so they have taken various surveys of the main features associated with the deepening of the Wilmington Harbor. His biggest area of concern is in the historic waterfront of Wilmington, which is on the National Register of Historic Places. "Through our program of sonar and magnetometer surveying we have discovered and rediscovered 21 sites that we think might be affected by the deepening project or the construction of other features like turning basins."

According to the North Carolina Division of Archives, there are 37 historic shipwrecks listed on the 1985 National Register of Historic Places Registration addendum for the Wilmington Historic District. In addition, more than 130 shipwrecks are known in the lower Cape Fear to Northeast Cape Fear River vicinity, and nearby upland historic sites. Kimmel says it is hard to determine what might be historically interesting, but he says there's enough interest by the state to try to investigate as much as possible.

"Some of these locally built vessels have a lot of significance in terms of understanding what happened to local industries, for instance, oystering," Kimmel said. "Did they require special boats adapted for that purpose? These were important industries that kept people alive."

"African Americans, who were slaves on the plantations, brought boats called *bateaus* loaded with plantation produce down some of the smaller rivers," Kimmel added. "When we find boats like that it indicates the type of economic activity that was going on. Also, Wilmington and other port towns were avenues for the Underground Railroad, and African Americans who brought cargo down the river learned things while they were in Wilmington that they took back to the plantation."

Kimmel said the importance of studies is that they show how local economic



A sonar image of a ship sunken in the Cape Fear River.

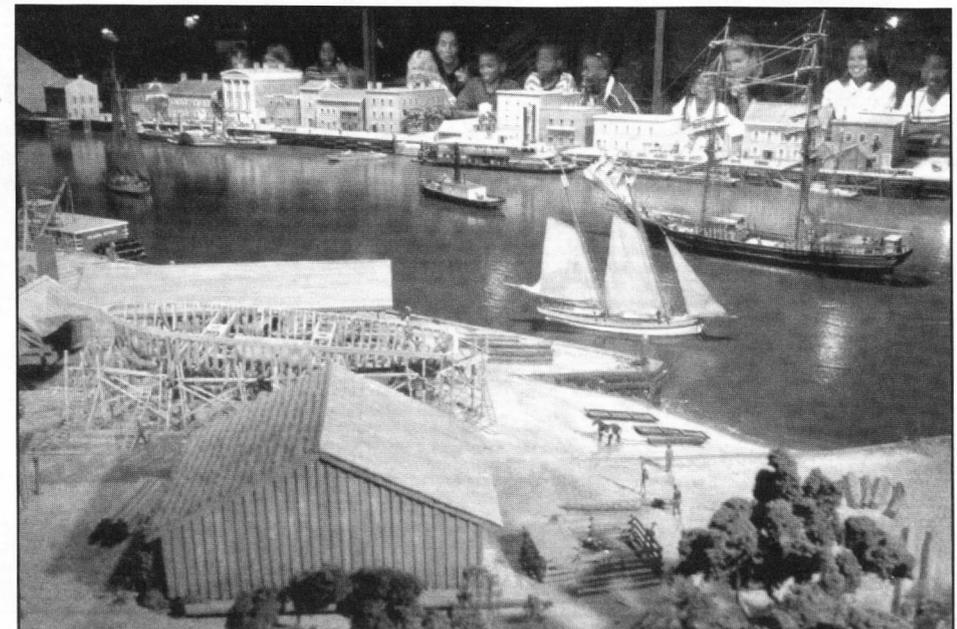
activity is tied to the "big picture" of regional and even national growth.

"So, almost all of this activity with small boats was very important in terms of the local economy," said

Kimmel. "And that's really why we're interested. The central role of the port, then as now, is very dependent on getting products distributed through local networks."



What looks like junk to most people is the remains of an old wharf and barge to Wilmington District archaeologist Richard Kimmel.



A display in the Cape Fear Museum shows the kinds of vessels active in the mid-1800s. (Photo courtesy of the Cape Fear Museum)

Construction challenging in Greenland

By JoAnne Castagna
New York District

Near the Arctic circle, nestled between two mountains and surrounded by miles of icebergs and glaciers, stands Thule Air Force Base in Greenland, America's northernmost military installation.

In this remote area of the world you will also find U.S. Army Corps of Engineers personnel who volunteer to stay at the base, months at a time, to supervise new construction and renovation projects to keep the installation's mission fully operational.

Projects have included an aircraft runway and taxiways, new living quarters, a firefighting training facility, and most recently a new medical center.

Thule AFB. Greenland, a province of Denmark, is the world's largest island, slightly more than three times the size of Texas. It sits 900 miles south of the North Pole between northeastern Canada and Europe. More than 80 percent of the sparsely populated island is covered with flat, sloping icecaps, and small glaciers.

In the northwestern corner of Greenland, in a coastal valley, sits Thule Air Force Base. *Thule* (pronounced *two-lee*) is Latin for northernmost part of the inhabitable world. The air base is home to hundreds of personnel, including active-duty Air Force members, U.S. contractors, Danish personnel, and Greenlandic personnel.

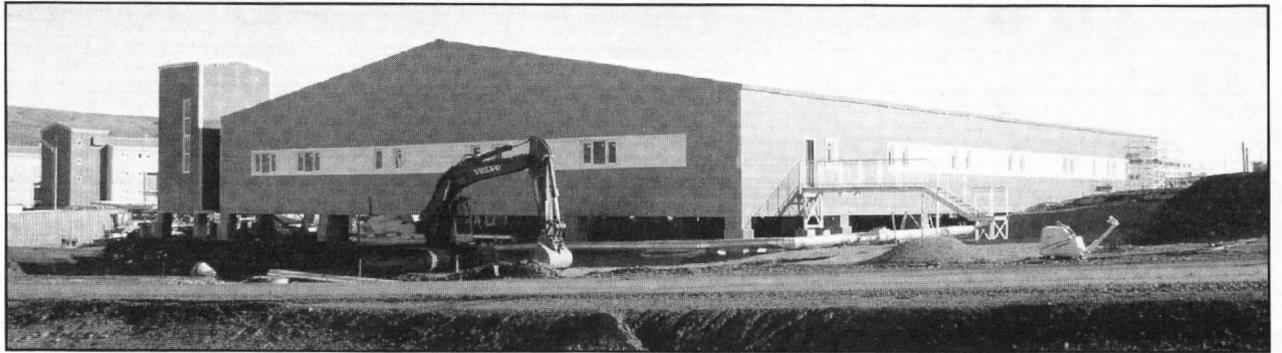
Medical center. Earlier this winter, Thule AFB unveiled its new state-of-the-art medical center, a single-story, 1,900 square meter (about 6,233 square foot) facility built by the Denmark-based firm GC/MTHøjgaard under a design/build contract, and supervised and quality assured by New York District.

The base needed a new medical center because the old one was built 50 years ago. It was becoming too expensive to operate, and was located far from current housing facilities of the main base population.

"The new facility will save the U.S. Air Force a great deal of money in costly utility services," said Col. John Haven II, 821st Air Base Group Commander.

Besides saving money, the base's personnel, as well as residents of local West Greenland communities, will benefit from the new facility's services.

"Some of the new services the medical center provides that are unique to this region include outpatient care, inpatient and surgical services, mortu-



The medical center at Thule Air Force Base in Greenland. (Photo courtesy of New England District)

ary facilities, and digital x-ray services that will provide lower radiation dosages, a quicker product to doctors, and no adverse effects to the environment," said Capt. Cory Baker, 821st Support Squadron Medical Liaison Officer.

Arctic construction. "Construction at Thule is a great challenge," said Joseph Valade, team leader of the district's Fort Drum Resident Office. "The weather is severe. The construction is unique and fast-paced, with a lot of logistical challenges."

Valade is familiar with the working conditions at Thule because he has worked on various construction projects at the base as a military officer and civilian employee for the last 20 years, sometimes working on the installation for months at a time.

Valade was the on-site manager for the new medical center, and worked with other on-site Corps engineers, including Sudha Brown from Europe District and Sterret Daniels from New York District.

Construction of the center took place from May 2003 to October 2004 only during the summer and fall months. "There is a limited exterior construction season, between June and mid-September, because Thule is above the Arctic Circle," said Valade. "They have 24 hours of sunlight from June through August and 24 hours of darkness from November through February. During the summer period high temperatures are in the mid-50 degree range. During the winter season they experience storms and the weather is too severe to work outdoors."

During the warmer summer months, the team received their construction materials. During the summer, Greenland's frozen shipping lanes can be broken up to allow supply ships in. The island is locked in by ice nine months out of the year.

The materials they used to build the new facility

included pre-insulated metal panels for the underside of the flooring, walls, and roof, and a composite gypsum and metal decking system for the interior floors.

Permafrost. Due to the harsh Arctic environment, the medical center had to be built differently than a typical building. Two-thirds of the northern portion of Greenland, where Thule is located, is covered with 6-12 feet of permafrost — permanently frozen ground.

"Due to the presence of permafrost, most structures in Thule are elevated, and this includes elevating the medical center," said Valade. "If buildings are not constructed off of the ground or have air corridors separating the buildings from the ground, the heat from inside the buildings can melt the permafrost and the buildings can sink."

Teamwork. The construction work on the medical center was performed in collaboration with a team of other agencies.

"The working relationship between the agencies was very good," Valade said. "Due to many challenges including Thule's limited logistics, severe weather, unique construction activities, and short construction season, construction issues had to be resolved quickly. All of the agencies involved expedited resolutions of issues to keep the construction project moving on schedule."

"We appreciated the Corps of Engineers staff member on-site who provided constant oversight of the construction," said Haven. "The partnership produced a great finished product that we, at Thule, are extremely proud of."

(Dr. JoAnne Castagna is a technical writer with New York District.)

Good security doesn't have to be ugly

By Marilyn Uhrich
Galveston District

Providing security for federal buildings is a major concern during the Global War on Terror. But how do you avoid the guardhouses, iron fences, vehicle barriers, concrete barricades, and steel bollards that give many federal buildings a forbidding prison look?

We want our security features to be effective, but low profile and attractive. And it would be nice if they are cheap, and perform a community service, to boot.

Galveston District's solution was to build a wetland. The elegant project won an honorable mention in the 2005 White House Closing the Circle Awards.

The Jadwin Building, on the eastern end of Galveston Island overlooking the Gulf of Mexico and Galveston Bay, is headquarters for Galveston District. A project delivery team was charged with bringing the site up to the security standards required by Homeland Security guidance.

The PDT, led by landscape architect Rhonda Brown, looked at the advantages of creating "soft barriers" (wetlands) rather than installing traditional hard structures. Resistance to the plan faded as the team

explained the benefits of such a plan and persuaded district leadership to venture "outside the box."

Funded through a grant from Homeland Security, the entire project cost \$428,000. It included relocating a guard house, excavating two acres for water barriers two to six feet deep, raising and widening the main entrance road, installing a new bullet-resistant guardhouse with restroom, and installing new entry gates, conduit, and entrance card reader boxes.

The district will save more than \$10,000 a year by eliminating the need to mow and fertilize the water barrier areas, and pollution from mowing will be reduced, too. Once established, the wetlands will require only occasional invasive species control, estimated at around \$4,000 every three years.

The typical iron fencing would have cost \$500,000 and would have required thousands of dollars in annual painting due to the corrosive coastal environment. The excavated material was used as fill to raise and widen the entrance road for the new guardhouse, saving another \$18,000 on construction costs.

And the wetland environment even serves as a community education tool. During construction, the Seaborne Challenge Corps, a local program for high



A water barrier gives both security and natural beauty. (Photo courtesy of Galveston District)

school students with personal challenges, and a local Boy Scout Troop assisted with the project, planting trees, shrubs, and wetland plants, building benches, and installing signage to educate others about the water barriers.

A local non-profit program, Water Education for Teachers, will enable teachers to use the habitat as an outdoor classroom for environmental education.

Thrift Savings Plan open season ended

Beginning July 1, open seasons for enrolling in the Thrift Saving Plans (TSP) will be eliminated and you will be able to enroll or change your contribution amount at any time. Elections made on or after July 1 will become effective no later than the first full pay period after receipt.

TSP is a retirement savings and investment plan for federal employees and members of the uniformed services. Congress established the TSP in the Federal Employees' Retirement System Act of 1986. The purpose of the TSP is to provide retirement income. The TSP offers federal employees the same type of savings and tax benefits that many private corporations offer their employees under 401(k) plans.

On October 30, 2000, participation in the TSP was extended to members of the uniformed services, including the Ready Reserve. In the Civilian component of the TSP, employees covered by the Federal Employees' Retirement System (FERS) and the Civil Service Retirement System (CSRS) can both contribute to the TSP, but the participation rules are different for each.

The TSP is a defined contribution plan. The retirement income that you receive from your TSP account will depend on how much you (and your agency, if you are a FERS employee) have contributed to your account during your working years and the earnings on those contributions. The contributions that you make to your TSP account are voluntary, and are separate from your contributions to your FERS Basic Annuity or CSRS Annuity.

In contrast to the TSP, the FERS Basic Annuity and the CSRS Annuity are defined benefit programs. This means that the benefits you receive from your FERS or CSRS annuity are based on your years of service and your salary, rather than on the amount of your contributions and earnings. Most of the contributions to these annuity programs are made by your agency on your behalf. Your contributions are mandatory, and the amount you contribute is defined by law. Your contributions are made by payroll deductions that your agency takes automatically from your paycheck.

On the other hand, your TSP contributions are voluntary, and in an amount you choose. Your TSP benefits are in addition to your FERS or CSRS annuity. If you are a FERS employee, the TSP is an integral part of your retirement package, along with your FERS Basic Annuity and Social Security. Therefore, failure to contribute will significantly impact your retirement benefits. If you are a CSRS employee, the TSP is a supplement to your CSRS annuity.

Federal income taxes are deferred on all contributions to your TSP account. Your TSP benefits can significantly increase your retirement income, but starting early is important. If you start to contribute to your TSP account as soon as you are hired, the earnings in your account will compound over a longer period of time. Also, if you make certain to contribute your own money early on, you will not miss out on Agency Matching Contributions once you become eligible for them.

Your agency is responsible for determining your retirement coverage and reporting to the record keeper the dollar amount of contributions to your account each pay period. Your agency also distributes TSP materials and answers your questions about the TSP. While you are employed, your agency is your primary TSP contact.

You should compare the information on the earnings and leave statements that you receive from your agency with your TSP participant statements to ensure that your agency has provided the correct and up-to-date information about your contributions. As long as you are employed by the federal government, your agency must also provide the record keeper with the personal information necessary to maintain your account — for example, your date of birth and address.

If you need to correct your TSP account information, including your address, contact your civilian personnel advisory center. Your agency is responsible for correcting errors in your personal information and in contribution (and loan payment) amounts.

FERS participants: You can contribute up to 15 percent of basic pay each pay period to your TSP

account as soon as you become a federal employee. Once you are eligible, you will receive the agency automatic one percent contributions and the agency matching contributions, up to a total of five percent.

CSRS participants: You can contribute up to 10 percent of your basic pay each pay period to your TSP account. You do not receive any agency contributions.

For all participants: TSP offers immediate employee contributions, before-tax savings and tax-deferred investment earnings, daily valuation of accounts, low administrative and investment expenses, transfers or rollover of eligible distributions into the TSP, a choice of several investment funds, ability to make contribution allocations daily, ability to make interfund transfers daily, loans from your own contributions and attributable earnings while you are in federal service, catch-up contributions for participants age 50 or older, in-service withdrawals for financial hardship or after you reach age 59.5, portable benefits and a choice of withdrawal options after you separate from federal service, ability to designate beneficiaries for your account balance, and protection of spouses' rights for loans, withdrawals, and recognition of court orders.

There is a TSP Web site (www.tsp.gov) with general account information, which provides the capability for requesting interfund transfers and contribution allocations, the option of initiating (and in some cases completing) loan and withdrawal requests online, up-to-date TSP materials and information, online participant statements, and calculators to estimate account growth, loan payments, and annuity amounts, and an elective deferral calculator. (Separated employees can also update their address information on the Web.)

All federal civilian employee TSP elections should be submitted via the Employee Benefits Information System, which may be accessed on the Army Benefits Center-Civilian (ABC-C) Web site at <https://www.abc.army.mil/> or via the Interactive Voice Response System (IVRS) toll-free number 877-276-9287. For a listing of overseas toll-free telephone numbers, go to the ABC-C Web site.

Coast Guard trains with Corps vessel

Article by Megan Nelson
Photo by Steven Baum
Norfolk District

It's not unusual to see Norfolk District's debris vessel *Mobjack* being rescued by the Coast Guard. The *Mobjack* isn't in trouble; its crew is just providing a training platform for the Coast Guard.

On April 6, the captain and crew of the *Mobjack* were recognized for their support of Coast Guard Station Portsmouth's ongoing Homeland Security mission. Since June 2001, *Mobjack* Captain Norman Harris and crewmember Paul Salib have provided hundreds of hours of assistance to the crews of Coast Guard Station Portsmouth in training to tow a disabled vessel.

The station is tasked with many missions and is constantly training to respond. They always have difficulty locating adequate training platforms, especially large heavy vessels, to practice their skills. The weight of the *Mobjack* is optimum for simulating a worst-case scenario rescue. The captain and crew of the *Mobjack* saw the need, and stepped in to fill the gap in the station's training program.

Harris said, "Being out on the water is hazardous at best. This is a controlled environment where they can make mistakes and learn from them."

The *Mobjack* crew has seen Coast Guardsmen learn valuable lessons. One in particular that is learned



The *Mobjack*, Norfolk District's debris vessel, is the right size for Coast Guard training with large heavy vessels. At right, a Coast Guard boat takes the *Mobjack* in tow. (Photos courtesy of Norfolk District)

time and again is that a boat of the *Mobjack*'s weight will keep moving, even when the tow vessel has stopped.

According to Coast guard officials, thanks to the *Mobjack*, crews gain valuable hands on experience. Senior Chief Boatswains Mate Mark Rieger said, "By providing *Mobjack* as a training platform, they have ensured that dozens of rescue crews have hands-on experience and acquired the specific skills needed to tow a vessel of that weight and size.

"This training is all the more critical because the station is only rarely called upon to assist large ves-

sels and the time that the crew responds may be the first time they have had to use their skills," Rieger added. "Without the time and assistance of the captain and crew of *Mobjack*, the rescue crews would go out there with no practical experience."

The *Mobjack*'s regular mission is to collect and remove floating debris in Hampton Roads, and to coordinate with the Coast Guard, Department of Justice, and other federal and state agencies to conduct a program to prevent, detect, and prosecute the deposit of waste, refuse, and other injurious materials into navigable waters.

Around the Corps

Training in Iraq

Success of the Iraq reconstruction effort depends on the capability of the people of Iraq. Training Iraqi engineers is one way the Corps is assisting the Iraqi people increase their reconstruction capacity.

The Danger Resident Office near Tikrit held a Construction Quality Management (CQM) workshop for Iraqi engineers. Derek Chow, Danger Resident Office Engineer, developed and led the training.

Participants reviewed the CQM system. As with all technical material, a good bit of time was spent on terms and definitions, especially the roles of the contractor and the government. The CQM process, reporting procedures, and safety requirements at projects was discussed during the workshop.

This is not a one-time deal, but the first building block in an ongoing training process. All new staff joining the resident office will receive the training.

Military Engineers of the Year

Col. Albert Bleakley, Gulf Regional Engineer, has been honored as the Corps' 2005 Military Engineer of the Year. He was recognized at the Federal Engineer of the Year awards ceremony sponsored by

the National Society of Professional Engineers.

Bleakley received the award for his leadership of the Corps' construction management program in five Arabian Gulf nations, working with U.S. Central Command and host nation officials. He has been responsible for construction totaling more than \$500 million, most of which supported U.S. forces in the region.

In this position, Bleakley is the senior Corps representative deployed in the Arabian Gulf, representing Transatlantic Programs Center. Based in Kuwait, Bleakley oversees Corps projects in that nation, as well as work in Qatar, Bahrain, United Arab Emirates, and Oman.

He leaves Kuwait this month to be Deputy Commander of Mississippi Valley Division. He will be replaced by Col. Lawrence Sansone, Director of Public Works and Logistics at the U.S. Army Air Defense Artillery Center and Fort Bliss, Texas.

Competitive sourcing

Here are the answers to some frequently asked questions about competitive sourcing.

Why doesn't the Corps ask for VERA/VSIP authority in advance for functions scheduled

for competition?

It is DA policy to use VERA and VSIP to aid managing the reduction or reshaping of the workforce only *after* the form of an organization is known. The reasoning is that to use VERA and/or VSIP in the midst of a competition, when the form the organization will take is unknown (Most Effective Organization or private sector provider), could result in expending resources on positions that might be needed in the successor organization.

For this reason, DA will not approve VERA/VSIP for functions in the preliminary or competition phase. Equally important is the fact that neither VERA nor VSIP is guaranteed under *any* circumstance, as they are not an employee right or an entitlement.

Why doesn't the Corps offer human resource-related support resources for employees like resume writing, interviewing techniques, etc.?

It is still too early to launch any human resource support activities. After an initial decision for a competition is known, the appropriate steps will be taken to support affected employees. We are considering adding links on the competitive sourcing Web site to increase employee awareness of tools and techniques available to them as a natural part of their career management.

'Wheeler' cook retires after 60 years

By Eric Lincoln
New Orleans District

Edward Morehouse, Assistant Master of the dredge *Wheeler*, almost had a mutiny on his hands when he tried to change the southern comfort-food menus of Earnest Paynes. Paynes has been chief cook on the dredge for 23 years, and in at the end of April he retired with 60 years of service.

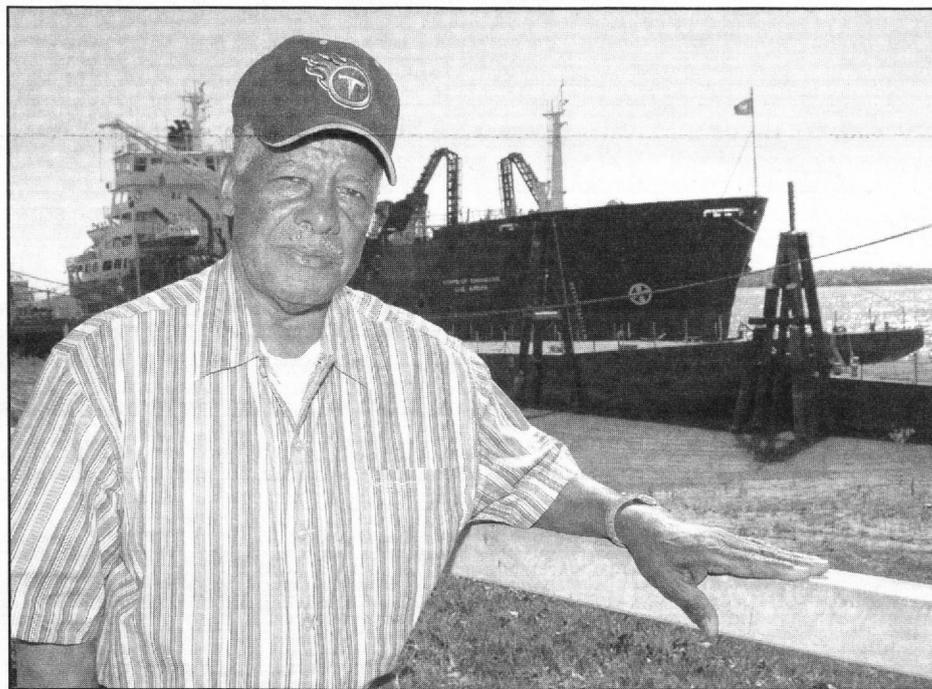
Along the way, Paynes has been a cook on four Corps dredges, traveled throughout the eastern and southern coasts of the U.S. and Puerto Rico, cooked thousands of meals that boosted the morale of hundreds of crewmen, and was a friend to many through the years, of all ranks and positions.

"It was always a pleasure to strike up a conversation with him over just about anything," said Morehouse. "He's been a trusted friend to many captains. And, interestingly, he's been working for the government longer than any of his chain of command in New Orleans District have been alive!"

Paynes started as a mess attendant on the *Pullen*, the district's first dredge, in October 1945 at 17 years old. He worked on the *Pullen* for three years, and then served on the *Omega* for four years. He served on the *Langfitt* for 30 years, eventually becoming chief cook there, before coming to the *Wheeler*.

Under the old Civil Service Retirement System, Paynes has enough sick leave to actually be credited with 62 years of service.

"My brother helped me get the job on the *Pullen*," said Paynes. "He was a cook here, too. I came on right after I got out of school. It was all right after I got used to it, and I made up my mind to stay as long as I could. I loved what I did. I got to see all the ships and visit different parts of the country. I've been to Virginia, North Carolina, and even



Earnest Paynes has been a cook on dredges in New Orleans District for 60 years. He retired at the end of April as the chief cook on the dredge *Wheeler*. (Photo courtesy of New Orleans District)

Puerto Rico. I don't have a boat at home. The only boat I own is the *Wheeler*. I've been on there since it came out of Avondale Shipyard."

Paynes took all his years of Corps service in stride.

"There were some good days, some bad," he said. "Some good weather, some bad. Lots of ships, you know? I'll miss it. I've been doing it my whole life."

"Earnest is of the old school, and I say that with fondness, almost remorse that those days are behind us," said Morehouse. "In the days of the 'kinder, gentler Corps of Engineers,' Earnest was one of those honest, hardworking employees who believed in a fair wage for a fair day's work, and always worked what he promised. We all just got along, did our jobs, and worried about

our own conduct. It was a true team environment born of family-style ship-board living. So, how does one ask Earnest for his favorite event or person when there are 60 years to choose from? There will be no tell-all autobiographies, even though he holds *many* secrets!"

The *Wheeler* is overhired right now, Paynes said, and that is the main reason he's retiring. "I want to give some other folks a chance to move up." He has some advice for the person stepping into his shoes. "It's all business in the kitchen. You know those men want to eat, and they know where the food is."

Morehouse, the Assistant Master, shares the job of captaining the *Wheeler* with William Rhea, the senior Master. Paynes always cooked during Morehouse's working tours.

"Earnest's cooking was old school – down-home, like-Momma-used-to-make fried chicken, grits and gravy, greens, and beans with bacon and lard," said Morehouse. "When Earnest did the cooking, you could tell what day of the week it was by the menu."

"As time progressed and dieticians figured out why old dredgeboaters were dying of heart disease, the menus changed," Morehouse continued. "Light oils replaced lard, baked and grilled foods replaced fried foods. Still, when Earnest was up to bat to cook a meal, mouths watered again for the temporary return to the delicacies of the past."

"When I became Assistant Master, my first order of business was to modernize galley operations on the ship, changing the day-of-the-week menu to one of constant variety, experimental meals, light fares, and exciting cuisine," said Morehouse. "After all, we had younger crewmembers with new tastes and cholesterol awareness."

"I almost had a mutiny on my hands! If we didn't have hotdogs, how would we know it was Saturday," said Morehouse. "How can anyone eat *baked* chicken on Sunday? Apparently, some things never change, regardless of good intentions. Earnest and his feel-good menus will be sorely missed. Somehow, parsley and bean sprouts just can't hold a candle to greens-and-bacon."

In retirement, "I'm going to take it easy," Paynes said. "My wife and I, we'll go see my sister in California." Paynes has four brothers and three sisters, one living in Alaska. He and his wife, Lillie, have been married 48 years.

Paynes also likes to fish, and plans to do more of it now that he has some free time. But he might not leave all that good cooking entirely behind. "I thought about opening a restaurant," he said. "I'd make chicken, fish, greens...real soul food, you know?"

25 years Ago

Recovery continues after eruption

By Patricia Ingraham
Portland District

On May 18, 1980, the eruption of Mount St. Helens in Washington State triggered the collapse of the volcano's summit and north flank, forming the largest landslide in recorded history. The mountain released more than 100 billion cubic yards of material, much of it settling in the Toutle, Cowlitz, and Columbia river basins to the west, and in Spirit Lake and its tributaries to the east.

The U.S. Army Corps of Engineers responded immediately. With wide experience in navigation and flood control, the Corps was uniquely qualified for the job ahead. Over the months and years that followed, Portland District engineers accomplished remarkable engineering projects, contributing creative solutions to recovery efforts that continue to this day.

Communication. On May 19, the Corps and the Federal Emergency Management Agency established communication headquarters in Vancouver, Washington, where local, state, and federal agencies teamed up to coordinate immediate and long-term recovery efforts.

Explosions from the volcano had subsided, but no one knew what might happen next. Overnight, regional waterways had filled with sediment and grown dangerously unstable. Planners worked hard to understand the exact problems they faced.

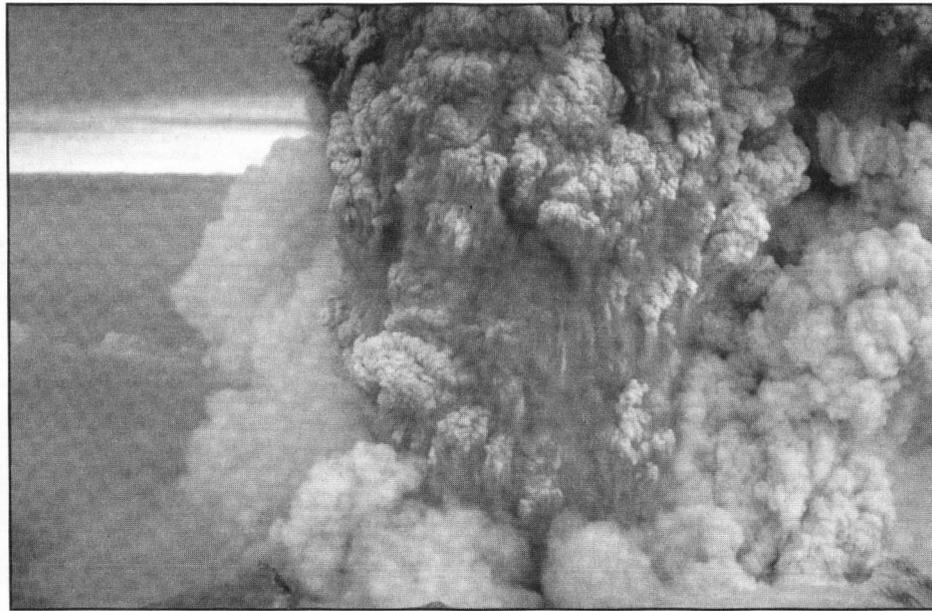
"There was a concentrated effort for three months to try to figure out everything that was going on, including the debris avalanche at Spirit Lake and all the blocked tributaries that ran along it, prior to the next rainy season," said Jerry Christensen, Chief of Portland District's Civil and Environmental Design Section.

Flood control and navigation became top priorities.

Disaster relief. Portland District was charged with three major tasks — clearing the Columbia River channel, restoring the flood-carrying capacity of the Cowlitz and Toutle Rivers, and building several small debris retaining structures on the north and south forks of the Toutle.

Clearing the channel. Mud and sediment pouring into the Columbia River had filled the channel from its usual 40-foot depth to only 15 feet. Ships were stranded, and the Port of Portland had come to a standstill. If the port were not quickly reopened, the region would lose a major grain-export industry.

The Corps moved fast. In partnership with port authorities and contractors, it mobilized four dredges that were manned around the clock. Larry Pattella, manager of the dredge *Oregon*, said he had never seen a crew show



This famous photo of Mount St. Helens in 1980 gives a hint of the eruption's power and widespread devastation. (Photo courtesy of Portland District)

such dedication. With remarkable determination, the Corps and its partners opened the channel to deep-draft shipping in just five days.

Stabilizing rivers. Upstream, the Cowlitz River had lost 85 percent of its flow capacity after the eruption. "It was completely full," said Christensen. "The mud was close to the top of the bank along that lower 20 miles."

Fifty thousand residents of Longview and Kelso worried about floods. Corps engineers were on site within 10 days of the eruption, initiating full excavation operations, including pipeline dredging.

Toutle River debris. The last task that remained, in an all-out effort to complete short-term recovery and stabilize rivers before winter, was building temporary debris dams on the North Fork Toutle River and South Fork Toutle River. District engineers designed and built the dams to impound debris eroded from mudflows upstream. The material was then excavated and removed to spoils areas nearby.

The Corps also installed trap and transport fishtraps at the South Fork Dam to move steelhead upriver or to cleaner streams.

By October 1980, before the winter rains, district employees and their partners had successfully stabilized the Columbia and Cowlitz rivers and built dams on the North and South Toutle. Corps planners now turned their attention to long-term recovery.

Long-term recovery. In June 1982, at the request of President Ronald Reagan, the Corps prepared a comprehensive plan for ongoing flood and navigation control. The plan focused on two major areas — the 600-foot-deep, unstable debris dam that formed at the natural drainage outlet to Spirit Lake, and continuing sedimentation of the

Cowlitz.

By July, Spirit Lake had risen dangerously high, 260 feet higher than its pre-eruption level. As a natural collection point for its tributaries, the lake would continue to rise until it either flooded over the dam or broke through it, causing catastrophic flooding downstream.

By August 1982 the U.S. Forest Service had declared the dam unstable, and President Reagan called for a state of emergency.

Pumping Spirit Lake. In early November, district engineers installed a barge-mounted pumping system across the debris dam to lower the level of the lake and secure the dam through winter. Water was pumped out of the lake into a stilling basin, and then into the North Fork Toutle through a 3,650-foot-long, five-foot diameter pipe.

"With the pumping system, we pretty much slowed down the rate of rise in the lake level, so we had time to come up with a permanent solution," said James Griffiths, now Assistant Chief of Hydraulics, Hydrology, and Geotechnical Design Branch. During the recovery, Griffiths was the principal designer for the Spirit Lake Tunnel project, and lead project geologist for the Sediment Retention Structure.

Spirit Lake tunnel. In 1984 Griffith's design team proposed a solution — they would excavate a tunnel that would function as a permanent outlet for Spirit Lake. The tunnel would measure 11 feet in diameter and extend 1.5 miles through solid rock. During construction, contractors used a 112-ton Robbins tunnel-boring machine.

"The greatest challenge to the project was probably the remoteness of the site and lack of access (initially, at least) to bring in equipment of any size," said Griffiths. The tunnel eventually lowered the lake level by 20 feet to its design elevation. It has worked flawlessly

for 25 years and continues to serve as a stable outlet to Spirit Lake.

Sediment retention. Possibly the greatest challenge Corps planners faced in stopping long-term sedimentation of the Toutle, Cowlitz, and Columbia rivers was how to handle the main debris avalanche in the Upper North Fork Toutle Valley, where water flowed through 3 billion cubic yards of volcanic material.

Planners estimated that 650 million cubic yards of sediment could be expected to erode downstream in the decades following the eruption.

The district design team launched a fact-finding mission and eventually found a promising sediment retention system (SRS) in Japan. In 1985, the Corps recommended a three-part solution — build a sediment retention structure (SRS) in the North Fork Toutle River Valley, improve levees at Kelso, and continue supplemental dredging of the Cowlitz.

Containing a landslide. In 1989 the SRS was in full operation. It essentially works as a modified dam to slow the river and contain the landslide as it erodes downstream. The structure is an 1,800-foot-long embankment rising 184 feet above the post-eruption streambed, with concrete outlet works and an unlined spillway at one end.

Upstream, the river flowed into the lake created by the dam. The lake's stilling action caused landslide sediments to drop to the bottom, creating a natural sandbar. Five rows of six outlet pipes allow water and fish to flow continuously through the dam, until over time sediment levels rose and the pipes were shut down.

In 1998, the last row of pipes was closed and the spillway has become the natural streambed.

SRS today. Today herds of Roosevelt Elk roam the valley, and the SRS is working as planned, according to Christine Budai, geologist and SRS project manager.

"The project itself has performed beautifully," said Budai. "I've taken helicopter rides and you can see sediment building up upstream of the SRS. That's not to say recovery efforts are over."

Mount St. Helens is still an active volcano and district engineers will continue to look for efficient ways to handle mudflows now and in the future.

Learning. Portland District engineers developed expertise in handling ash, mudflows, and debris during Mount St. Helens recovery work. In 1991, the Philippine government asked specifically for Portland District's help in recovery efforts following the eruption of Mount Pinatubo.

(Patricia Ingraham is a contract writer for Portland District.)