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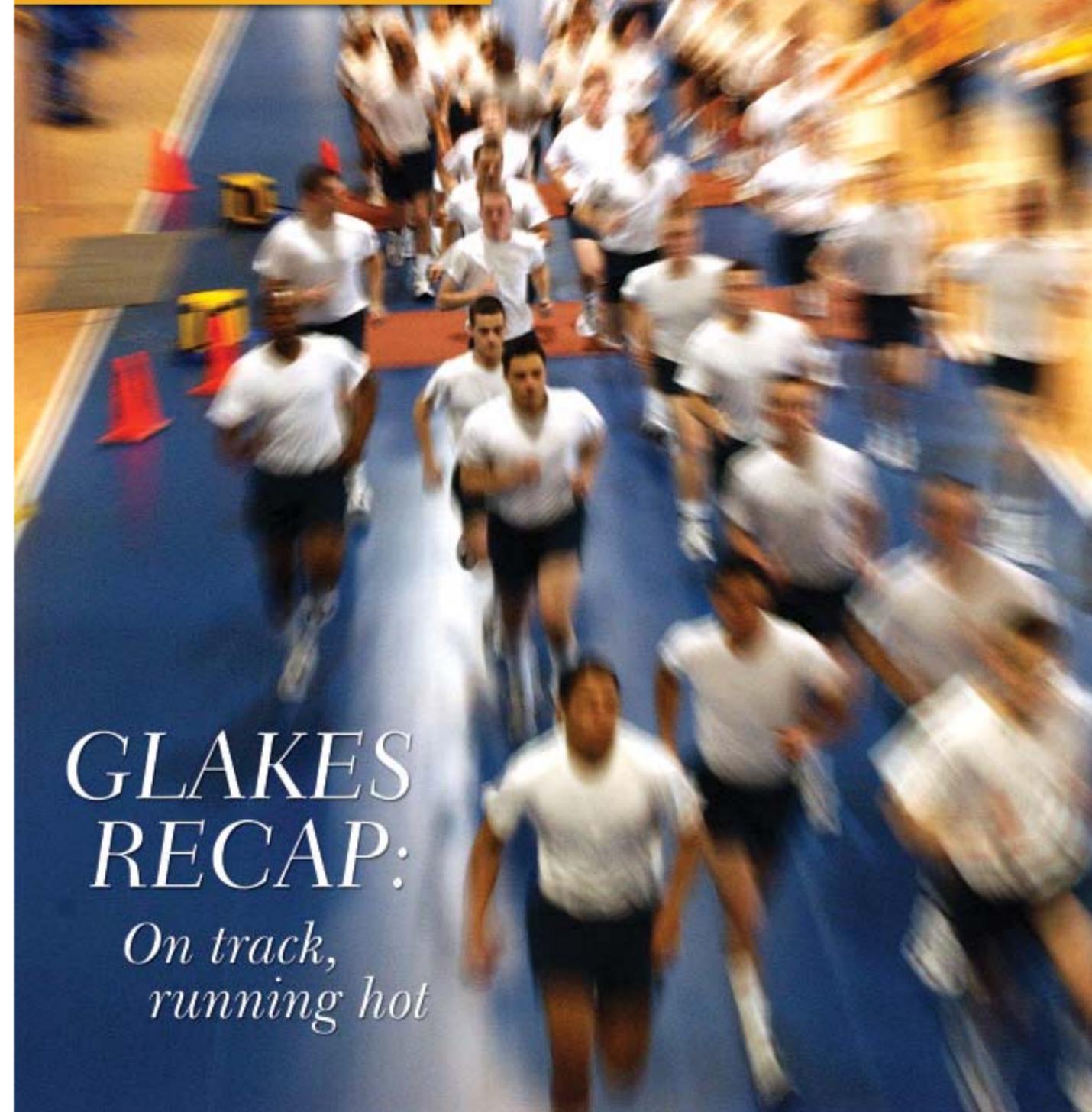
# NCE

navy civil engineer

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Hurricane Isabel floods USNA  
Enter the Roboski!*



## GLAKES RECAP:

*On track,  
running hot*



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## From the Chief

REAR ADM. MICHAEL K. LOOSE, CEC USN, COMMANDER NAVFAC & CHIEF OF CIVIL ENGINEERS

I AM HONORED AND PROUD to have been selected as the Commander of Naval Facilities Engineering Command (NAVFAC) and Chief of Civil Engineers. I would like to express my appreciation to Rear Adm. Mike Johnson for his leadership and many accomplishments that span a distinguished 34-year career—and most notably, for his last three years as our Chief. Rear Adm. Johnson's insistence on "One Facilities Engineer Voice" has taken civilian, military and contractor alike a long way toward integration and improving our support to the Navy/Marine Corps Combat Team.

We live in challenging times, with seemingly impossible demands placed on all of us. But if anyone can excel and achieve the impossible, it is you—the men and women of the NAVFAC, officers of the Civil Engineer Corps and our great Seabees.

My philosophy as your Chief is straightforward. Effectively accomplish the mission; manage our resources prudently and innovatively; and put our people first. Let's expand on each of these a bit.

Effectively accomplish the mission. This means getting the job done right, on time (or faster) and within (or under) budget. You know better than anyone what this means to our clients and to the Navy. Our numerous products and services are essential to the Navy and Marine Corps and they rely on us to do it right first time, every time. Never lose sight of our end users ... the Sailors and Marines.

Manage our resources prudently and innovatively. While our products and services are essential, they are in support of the primary Navy-Marine Corps combat team mission. That means they must be accomplished as efficiently and effectively as possible, with a focus on faster execution. We must first know the cost and time of doing business as compared to associated outputs, make effective, measurable process changes, and then harvest the savings of our efforts by making those process changes throughout the Command. Business Line manage-

ment, metrics and process innovation will be central to our efforts to make great strides here. Using the FacTS survey to provide us with client feedback, and leveraging numerous partnership agreements with our clients and alliances with other industry leaders, we will implement continuous improvement in our products and services.

Put our people first. This is key to any and all success. We will remain steadfast in our commitment to enhance leadership and professionalism. Our strong emphasis on "Safety First," Task Force Excel, Community Management and workforce shaping will continue and grow in importance. Each of us has a role to play here—and together we can ensure NAVFAC is the finest place to work in the Navy.

The underpinning of my philosophy is to continue our strategic intent and alignment with the CNO's priorities. Several years ago we embarked on a strategic direction that focused our team

efforts on People, Innovation, Clients and Operations.

From this strategic basis we worked on ways to enhance the functional and message alignment of the Command, then expanded the scope of our strategic alignment to support the new Commander, Navy Installations (CNI). The establishment of CNI is one of the greatest opportunities for positive change in the Navy shore establishment in a very long time. I am committing NAVFAC to making CNI a success.

I couldn't think of a better group of professionals to serve with during these challenging times. My expectations are high, the opportunities as well as challenges are many and our mission is clear.

Together we will move out to provide quality on-time support to our Sailors and Marines, while continuously seeking innovative methods to reduce costs.

Take care of yourself, your family and each other. 🌐



At RADM Michael R. Johnson's ceremonial Dining In, the Master Chief Petty Officer of the Seabees Harrell T. Richardson pins the outgoing Chief with a twin-star Master Chief Petty Officer anchor, designating Johnson an Honorary Master Chief by decree of the MCPON. Looking on in the background are RADM Michael K. Loose (center), the new Chief, and RADM Charles R. Kubic (far right), Commander First Naval Construction Division. Richardson's position and title were upgraded in late December to Force Master Chief, the first for the Seabee community since the early 1980s.



## Seabees Earn Presidential Unit Citation

STORY BY DARYL SMITH

NORFOLK — Seabees whodeployed in support of Operation Iraqi Freedom under the First Marine Expeditionary Force (I MEF) Engineer Group (I MEG) were awarded the Presidential Unit Citation Nov. 14. The medal is the highest Navy unit award.

"During the 33 days of combat, to the transition to civil-military operations, I MEF sustained a tempo of operations never before seen on the modern battlefield, conducting four major river crossings, maintaining the initiative and sustaining forces. The ferocity and duration of the campaign was made possible through the skills and determination of the Soldiers, Sailors, Airmen, Marines and coalition partners comprising I MEF at all levels, all echelons, and in all occupational fields," the citation read.

Seabee units that served under I MEG from March 21 to April 24 are authorized to wear the ribbon. For the listing of approved units, see CMC MARADMIN 507/03. This roster is currently under administrative review, and additional units may become eligible in future updates.

U.S. Navy Seabees played a major role in *Operation Iraqi Freedom*, constructing ammunition storage areas, aircraft parking areas, a prisoner of war camp, bridges and roads. After major hostilities ended, they

U.S. NAVY PHOTO BY PH1 ARLO K. ABRAHAMSON



Seabees with Naval Mobile Construction Battalion 133 rebuild the Sarabadi bridge on the Tigris River near Al Hillah, Iraq, May 26, 2003. Seabee units built bridges, roads, police stations, schools and infrastructure damaged during the war so that Iraqi citizens could use them once again.



Members of Naval Mobile Construction Battalion 74's security team pose outside of Iraq's Camp 93 entrance. The camp was named in honor of those who died on United Flight 93, Sept. 11, 2001. U.S. NAVY PHOTO BY J01(SW) STAN TRAVIOLI

repaired schools, police stations, fire stations and other government buildings, and repaired utility systems to help the Iraqi people. They also performed quality of life improvements for I MEF troops, including bed-down, showers and utility improvements. 🌐



**NCE**  
NAVY CIVIL ENGINEER

NAVAL FACILITIES ENGINEERING COMMAND

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Rear Admiral, CEC, USN  
COMMANDER

Naval Facilities Engineering Command  
and Chief of Civil Engineers

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**NAVFAC**  
Naval Facilities Engineering Command

I WELCOME AND APPRECIATE the opportunity for a recurring column in *Navy Civil Engineer* magazine. In coming issues, I'll use this platform to share with you the perspectives of my office, the Capital Improvements business line, the NAVFAC engineering community, as well as articles about cutting-edge NAVFAC technology, challenging projects and various policy and acquisition strategy issues.

Seabee contingency operations; or by designing child-development centers that offer Navy family members outstanding learning environments.

Our facilities engineering community is comprised of more than 2,000 engineers and architects, including employees at our engineering field divisions and activities, specialty organizations, public works centers, other field-level components and our headquarters located at the Washington Navy Yard.

With engineering expertise in planning, design, construction, project management, ocean engineering and other technical areas, our professional workforce is prepared to respond to and support both our peacetime and wartime naval mission, both domestically and in forward-deployed areas.

A key principle for all engineers at NAVFAC is the concept of "engineers in responsible charge." This

seemingly mundane phrase is the cornerstone of our sense of service to the Navy. It's a basic precept that we both foster and promote throughout our facilities engineering community.

We must maintain the engineering core competencies necessary to ensure that all facilities acquisition projects meet or surpass our clients' needs and protect the public safety and welfare.

Engineers in responsible charge have the academic credentials and work experience to be professionally licensed by state licensing boards. We are held accountable for demonstrating independent control and

direction of engineering work within our areas of expertise and must reflect the highest ethical standards of professional engineering conduct.

The NAVFAC engineering community embraces this level of responsibility and we take pride in our professional capabilities to serve and protect the interests of the Navy and Marine Corps, whether working directly on an engineering or construction project or overseeing and managing the work of our government contractor partners.

Along with the engineering community's technical expertise, we must also serve as a responsible steward of taxpayers' dollars. During the life cycle of a facility, from the initial planning phase to renovation or demolition of the structure, our engineers must partner with clients and contractors to ensure facilities and infrastructure offer the best value to our customers. We need to employ sustainable development features in all projects that will exceed the functional requirements of the facility and lower the life cycle maintenance costs.

So, another key aspect of "responsible charge" is the need for our engineers to responsibly minimize the costs of ownership — not to cut corners, but to provide smart and responsible engineering solutions at reasonable costs.

As NAVFAC's Chief Engineer, I am honored to serve alongside such a highly talented, dedicated and respected engineering workforce. We will continue to work as a team, seeking smart, innovative solutions for our Navy and Marine Corps colleagues and shipmates.

I'm look forward to future opportunities in this space to introduce you to the many exciting efforts currently underway within the NAVFAC engineering community. ☺

PHOTOGRAPH BY DAMON J. MORTIZ



The Visitor's Center at the U.S. Naval Academy was badly damaged during Hurricane Isabel. Several buildings on the USNA received more than eight inches of flood water. See related story on page 26.

It is important for all of us to understand the many aspects of the NAVFAC mission and our contributions in support of the Navy and Marine Corps. *Who* we are has everything to do with *what* we are.

Our professional facilities engineering support covers a wide spectrum of engineering and construction project management. Members of the NAVFAC engineering community (which includes engineers and architects) add value to our military clients and colleagues, whether it's in their ability to provide more secure buildings through essential force protection measures; by supporting Navy

# NAVFAC Changes Command

## Loose Becomes the New King Bee; Johnson Retires After 34 Years

STORY BY VIRGINIA BUENO  
PHOTOGRAPHY BY JOC DANIEL CHARLES ROSS

RADM Michael K. Loose assumed command of the Naval Facilities Engineering Command (NAVFAC) and became the 40<sup>th</sup> Chief of Civil Engineers in a ceremony at the historic Washington Navy Yard Oct. 24.

Loose relieved RADM Michael R. Johnson who had been in command of NAVFAC since October 2000. Johnson, who departs the Navy after 34 years of military service, was retired by the Chief of Naval Operations Admiral Vern Clark.

Loose, 49, a native of Albuquerque, N.M., comes to NAVFAC from Norfolk, Va., where he served as Commander, NAVFAC Atlantic Division, and Fleet Civil Engineer, Commander, U.S. Atlantic Fleet. As NAVFAC commander, Loose now becomes the Navy's senior ashore representative to the professional engineering community and construction industry.

During the ceremony, ADM Vern Clark awarded Johnson, a native of Enid, Okla., the Distinguished Service Medal — the Navy's highest peacetime award — for his efforts in leading 13,300 personnel in 22 subordinate commands and activities responsible for executing \$9 billion of global work. According to his award citation, Johnson "guided the Naval Facilities Engineering Command and Civil Engineer Corps in establishing the highest standards of excellence in the planning, design, construction and management of the naval shore facilities across the globe..." and "propelled NAVFAC into the 21st Century as a recognized leader in the delivery of facility engineering solutions, both within the Department of Defense and private sector." ☺



RADM Michael K. Loose gives remarks during the change of command ceremony.



The Naval District Washington Color Guard performed during the NAVFAC change of command ceremony Oct. 24. RADM Michael K. Loose assumed command from RADM Michael R. Johnson during a ceremony held at the historic Washington Navy Yard.



RADM Johnson, left, and RADM Loose unveiled Johnson's photo in the Chief's boardroom. The photo will be displayed in the room with other former Chief's photos.



Outgoing NAVFAC Commander, RADM Michael R. Johnson, is congratulated on his retirement by Chief of Naval Operations, ADM Vern Clark, while Commander, Naval Installations, RADM Christopher Weaver, looks on.



## PWC San Diego Wins Energy Conservation Awards — Again

SAN DIEGO (NNS) — The Federal Energy Management program announced that Navy Public Works Center (PWC) San Diego is the winner of two Federal Energy and Water Management awards for 2003.

The two awards, one for energy efficiency and management and the other for renewable energy, were presented to PWC's Energy Management System/Direct Digital Controls (EMS/DDC) team in Washington in late October.

The EMS/DDC team, consisting of Gail Cowens, Alice Jeffreys and Paul Viergutz of PWC; Gary Gates of NAVFAC Southwest Division; and Karlin Canfield of NAVFAC were responsible for enhancing the operation, maintenance and readiness of hundreds of facilities at 17 Navy and Marine Corps bases in the San Diego area.

"The EMS/DDC team installed automated systems that allows us to both monitor and control heating, ventilation and air conditioning systems in buildings. When people aren't there, we can turn [the systems] off, saving energy," said Wade Wilhelm, NRSW's utilities program manager.

Wilhelm said the automated systems also allow for PWC to predict maintenance requirements. This is important, he said, because it saves time and money.

"In the duct work [of an HVAC system], there is a filter," said Wilhelm. "As that filter gets plugged up, the pressure, incoming and outgoing, increases. We can monitor the pressure on each

side of the filter to tell us when it needs to be replaced, as opposed to replacing it [on a routine basis]."

By doing that, Wilhelm said that PWC reduces the frequency of filter replacement by 50 percent.

"We have a fantastic team that is putting a large network of monitors and control points throughout the San Diego metro area, including [Marine Corps Air Station] Miramar," said Wilhelm.

PWC San Diego won the renewable energy award for the 750-kw photovoltaic parking system at Naval Air Station North Island [NCE, Winter-Spring].

Installed last November, the parking system is among the 20 largest photovoltaic systems of any kind in the world and is expected to produce 1,244,000 kWh per year. The system hit the one million kWh mark in early August.

Although the Navy still heavily relies on California's power grid for most of its energy, Wilhelm said the photovoltaic system — which also provides covered parking for more than 400 vehicles — provides approximately three percent of the load at the base, freeing up that much more of California's grid.

"The Navy is the largest consumer of electricity in San

Diego County," Wilhelm said. "We're doing what we can [to help produce energy]."

Wilhelm said that the photovoltaic system plays a role in bettering the environment.

"Even though power plants are much cleaner now than they were 10 or 20 years ago, they still produce pollution," said Wilhelm. "The photovoltaic system produces absolutely no pollution."

It's believed that the solar cell system may eliminate emissions equaling that of more than 1,480 vehicles within 25 years.

— J02 David Van Scoy

## Six Flags Over NAVFAC

The CEC/Seabee Flag Officers, from left, RDML Richard Cellon (LantDiv); new NAVFAC Commander and incoming Chief of Civil Engineers RADM Michael K. Loose; RADM Charles R. Kubic (1NCD); RADM Michael R. Johnson, outgoing Chief; RADM James McGarrah (Dep. Chief); RDML(sel) Gary Engle (PacDiv).



## England Returns as the 73rd Secretary of the Navy

WASHINGTON, D.C. — Gordon R. England has been sworn in as the 73rd Secretary of the Navy. England becomes only the second person in history to serve twice as the leader of the Navy-Marine Corps Team and the first to serve in virtually back-to-back terms.

John Mason served as the 16th Navy secretary from 1844-1845 and 18th Navy secretary from 1846-1849.

England had served as the 72nd Secretary from May 2001 until January 2003 before President George W. Bush tapped him to serve as the first deputy secretary at the newly created Department of Homeland Security.

"Our Sailors and Marines are indeed the world's finest and I appreciate the president giving me the opportunity to

again serve our men and women in uniform and their families," said England.

"Working with the Congress and our great Chief of Naval Operations Vern Clark, Marine Corps Commandant Mike Hagee and Secretary Rumsfeld's team, we will continue to transform our Naval services and wage the global war on terrorism."

Hansford T. Johnson, who served as acting secretary following England's move to Homeland

Security earlier this year, continued to serve as the Assistant Secretary of the Navy (Installations and Environment). With Secretary England's return, Johnson will continue to serve America's Sailors and Marines in that pivotal support role full time.

"I welcome Gordon home to his Navy-Marine Corps family," Johnson said. "It has been a distinct honor to serve as acting secretary during this important time in our nation's history and I am grateful to President Bush for the opportunity to serve. I also appreciate the outstanding work of our Sailors and Marines and the support of Secretary Rumsfeld, Adm. Clark and Gen. Hagee."

Chief of Naval Operations Adm. Vern Clark praised both leaders.

"Our institution is honored

to welcome home Mr. England as secretary of the Navy," said Adm. Clark. "His leadership, focus on mission accomplishment and commitment to improving both our business practices and the quality of service for our Sailors and Marines are valued and needed qualities as we build the future Navy."

As secretary of the Navy, England leads America's Navy and Marine Corps and is responsible for an annual budget in excess of \$110 billion and more than 800,000 people.

### NAVFAC FTMW Cops Nathaniel Stinson Equal Employment Opportunity Award

GREAT LAKES, ILL. — NAVFAC's Facilities Team Midwest (FTMW) was awarded the prestigious 2003 Nathaniel Stinson Equal Employment Opportunity Award.

The team won because of its workforce diversity programs and the many programs developed to train and retain employees dedicated to providing the best-value solutions for clients in the team's 15-state area of responsibility.

FTMW has also successfully developed Cooperative Education Programs for skilled trades and engineering field employees. They are currently developing an apprenticeship program for trades positions that provides four to five years of training to the journeyman level.

FTMW has designed and implemented career development paths for both GS and wage-grade employees. The Multi-Faceted Advancement Plans target training,

education, leadership and development experiences through entry level, mid-level and senior level and provide guidelines in conducting annual mandated Individual Development Plans for all employees.

FTMW provides employment to individuals through the Veterans Readjustment Program; to employees with disabilities; and via contract with Goodwill Services through National Industries for the Severely Handicapped.

The office also provides jobs to surrounding Lake County area youth from disadvantaged families through the Summer Youth Employment Program.

Resource centers throughout the FTMW area provide computers to employees for use in accessing career information online.

Resource Centers also make books, videos, professional magazines and related materials available for employee check-out.

### DFAS myPay Customers Cautioned to be Wary of 'Look-Alike' Web Sites

ARLINGTON, Va. (NNS) — The 2 million military and civilian users of the Defense Finance and Accounting Service (DFAS) "myPay" Web site are being cautioned to use only the official myPay site when seeking access to pay account information.

Look-alike sites have recently frustrated myPay customers, who have been confused by accidentally finding their way to a commercial site — "myPay.com" — that is in not affiliated with DFAS or the DoD.

"Personal information is >>>

valuable and should be safeguarded," said Claudia L. Bogard, director of Corporate Communications for DFAS.

"Don't provide your personal information to any website unless you know it can be trusted."

The DFAS myPay is a secure, DFAS-operated website that lets active duty, National Guard and Reserve military members, civilian employees, military retirees and annuitants take charge of their pay accounts online. The genuine DFAS myPay website can only be located at the address of <https://mypay.dfas.mil>.

— Bryan Hubbard

#### Professional License Required for all NAVFAC Engineers

WASHINGTON, D.C. — Since July 2003, all Naval Facilities Engineering Command engineers and architects at or above the grade of GS-13 must hold a professional license (P.E. or R.A.). Engineers and architects below the grade of GS-13 are strongly encouraged to obtain their license. Unlicensed engineers and architects currently graded GS-13 and above cannot be considered for promotion until their license is acquired.

All Civil Engineer Corps officers who wish to sit on the Architectural/Engineering Slate and selection boards are required to obtain a license.

The requirements for licensing were released in Naval Facilities Engineering Command Instruction 3540.1, dated July 11, 2003.

According to the instruction, any person who is responsible for any engineering/architectural work, products and services, whether performed in-house or by

contractor, must have a professional license. It is also required for any engineer or architect who supervises workers who perform the engineering or architectural work. Unlicensed engineers and architects must receive direct supervision and day-to-day oversight from licensed engineers and architects. Engineers may only sign and/or apply a P.E./R.A. seal to drawings or other documents if they are licensed.

Waivers may be granted only to an individual who is actively pursuing professional licensing, has at least two years of engineering experience and who has passed the initial written examination required toward licensing. Only the NAVFAC Chief Engineer may approve a waiver to this policy.

The policy was enacted because the Navy relies on NAVFAC to be its facilities, installation and contingency engineers. NAVFAC supports the Department of the Navy in all matters related to engineering, design, construction, maintenance and operation of shore-based facilities. The engineering community workforce, which includes both architects and engineers, is on call at all times to provide engineering assistance to forward-deployed Seabees.

Fulfilling that mission requires that NAVFAC employ a world-class engineering workforce, dedicated to the protection of public health, safety and welfare. Professional licensing is an important measure of the competence, dedication and professionalism of the NAVFAC engineering workforce and is widely recognized by clients and the general public. 🌐



U.S. NAVY PHOTOGRAPH BY JOC DANIEL CHARLES ROSS

#### Roark First NAVFAC Executive Director

John E. Roark Jr., NAVFAC's comptroller since June 1998, was named the command's first acting executive director Oct. 14. He will serve in the temporary "acting" capacity pending the expected final confirmation of the new senior civilian position.

Roark will work with the NAVFAC Commander to provide top-quality, cost-effective and timely engineering support to the Navy, Marine Corps and other clients.

He was appointed to the Senior Executive Service in 1981 and has served in a variety of assignments, including deputy assistant comptroller for PWCs; assistant commander for Facilities and transportation; and deputy comptroller.

"For 33 years, John has established a well-respected record of excellence in facilities engineering and financial management," said RADM Michael R. Johnson, then the NAVFAC Commander. "John's tireless energy, stamina and enthusiasm are well suited for this challenging assignment as executive director. I have all the confidence in the world that he will perform superbly." 🌐

## PWC JAX Boosts Revenues With Transportation Dept. Vehicle Auctions

The Public Works Center Jacksonville Transportation Department has found a way to minimize the cost of maintaining its fleet of more than 1,000 vehicles and civil engineering support equipment — auctions.

No, not on eBay. Since 1998, the department has obtained more than \$2 million in revenue from transportation auctions. All proceeds from these auctions are used to buy similar vehicles or equipment that was sold. Auctions also help the Jax department control rates charged to its clients.

The department also purchases from 70 to 100 vehicles each year at auction, including pickup trucks,



NAVY PHOTOGRAPH BY FRANK ROGERS  
Obsolete or used up vehicles and equipment are auctioned off and the cash is used to replace similar civil engineering support equipment.

vans, sedans and heavy equipment such as cranes, construction and railway equipment. The use of trans-

portation auctions has been very successful and generates revenue that otherwise would not exist.

The Transportation Department monitors its fleet and follows Naval Facilities Engineering Command regulations to determine when vehicles or equipment can be cycled through the auction process.

Eligible vehicles for auction must be over age or high mileage. In the case of specialized or construction equipment, the piece must either be over age or high mileage, and the one-time repair cost must be more than 20 percent of the replacement value.

— Sue Brink

## NAS JAX Fitness Center Upgrades

Sailors stationed at Naval Air Station Jacksonville recently returned to a newly rehabbed Fitness Center following its complete renovation. The center reopened in May after being closed for six months.

The renovation project included a 3,082-square-foot free-weight training area addition that was completed July 8.

The renovation contact was awarded Sept. 28, 2002, in the amount of \$868,106. An option for the addition was exercised April 3 in the amount of \$354,536.

The Resident Officer in Charge of Construction Jacksonville team, contracting specialist Susan Caldwell, construction manager Brenda Schwelling and construction representative Earle Bank all worked together to ensure the final project was completed on time and on budget.

In addition to the free-

weight training area, many improvements were made to the existing facility during the renovation. New fixtures and carpet were installed throughout the fitness center and the locker rooms, including new tile, plumbing, counter tops, mirrors and new shower stalls. The free-weight training addition includes rubber flooring, carpeting and nine 27-inch TV/VCRs.

NAS JAX Fitness Director Barbara Millhollan remembers when the Fitness Center was the old Hobby Shop and Veterinary Clinic back in the early 1990s. She was there when the Fitness Center opened its doors in 1991.

Since then, there have been minor improvements such as the addition of administrative office areas and an aerobics room when the Veterinary Clinic was relocated in 1993.

"I have waited 18 years to see these improvements," says Millhollan. "The entire



Sailors and families at NAS JAX enjoy the newly renovated Fitness Center.

community has heard about our renovations. Owners from a local gym have visited our Fitness Center to see the improvements we have made. They are looking at their remodeling plans and heard from the community about the success we were having — and how quickly we reopened our doors for business."

Customers report they really appreciate the improvements. "I love what they have done in the women's locker room. It

is beautiful, just gorgeous," said Dora Ockerman, who lives on the west side of Jacksonville and often works out in the Jax Fitness Center three times a week.

"I haven't worked here long, but everyone says how beautiful it is here now and how it has changed for the good," said Ship's Serviceman Seaman Marcus Thomas, NAS JAX Transient Personnel Unit, who is temporarily assigned to the Fitness Center. 🌐

## NAVFAC Reinvents Versatile Lighterage System

*Improved cargo transfer method will move military materiel faster and better*



The Warping Tug is used for towing, anchoring and salvage operations, as well as to assemble the INLS sub-systems. It can travel at speeds from 7 to 10 knots.



The Roll On/Roll Off Discharge Facility is the conduit between Military Pre-positioning Force ships and Navy lighterage for offload of rolling stock.



The Causeway Ferry offers an increased cargo capacity and can travel up to a relatively speedy 10 knots, operate in a Sea State 3 and survive the rougher Sea State 4.



The Floating Causeway is an anchored, non-powered floating pier used to interface with lighterage and other support craft for offload of rolling stock and cargo.

NAVFAC announced Aug. 14 that its Sealift Support Program Office has awarded a multi-year contract to Marinette Marine Corporation, Marinette, Wis., for the manufacture of the new Improved Navy Lighterage System (INLS).

The initial contract year is valued at \$40.5 million. If all five fixed option years are exercised, the total contract value is \$404,815,320.

The INLS provides the Navy with a more efficient method of moving equipment, such as trucks, tanks and cargo, from Strategic Sealift Ships to shore areas in locations where conventional port facilities may be damaged, inadequate or even nonexistent.

Each barge will be approximately 80 ft. by 24 ft., will weigh between 75 and 124 tons, and will be capable of carrying approximately 150 tons of cargo. Six of the 29 barges will be powered by 360-degree rotating water-jet thrusters for propulsion and station-keeping.

"This advanced engineering system will enhance our Navy and Marine Corps combat operations when ports are degraded or unavailable," said Rear Adm.

Michael R. Johnson, former NAVFAC Commander and Chief of Civil Engineers. "Although our Navy lighterage has worked effectively since World War II, the improved system better supports our combat operations with speed, flexibility and effectiveness."

The INLS replaces the existing Navy Lighter (NL) system, developed during World War II and is near the end of its useful life. While still effective, the NL system is maintenance-intensive and has less cargo capacity and power.

The INLS provides a reliable and cost-effective system to significantly improve the Navy's ability to deliver critical supplies and equipment ashore.

The system is comprised of powered and non-powered floating platforms assembled from interchangeable modular components. In their assembled configurations, the modules are used to transfer cargo between Strategic Sealift Ships and the shore.

Four basic platforms comprise the INLS system. The platforms consist of a warping tug, a causeway ferry, a floating causeway and a roll-on/roll-off discharge facility.

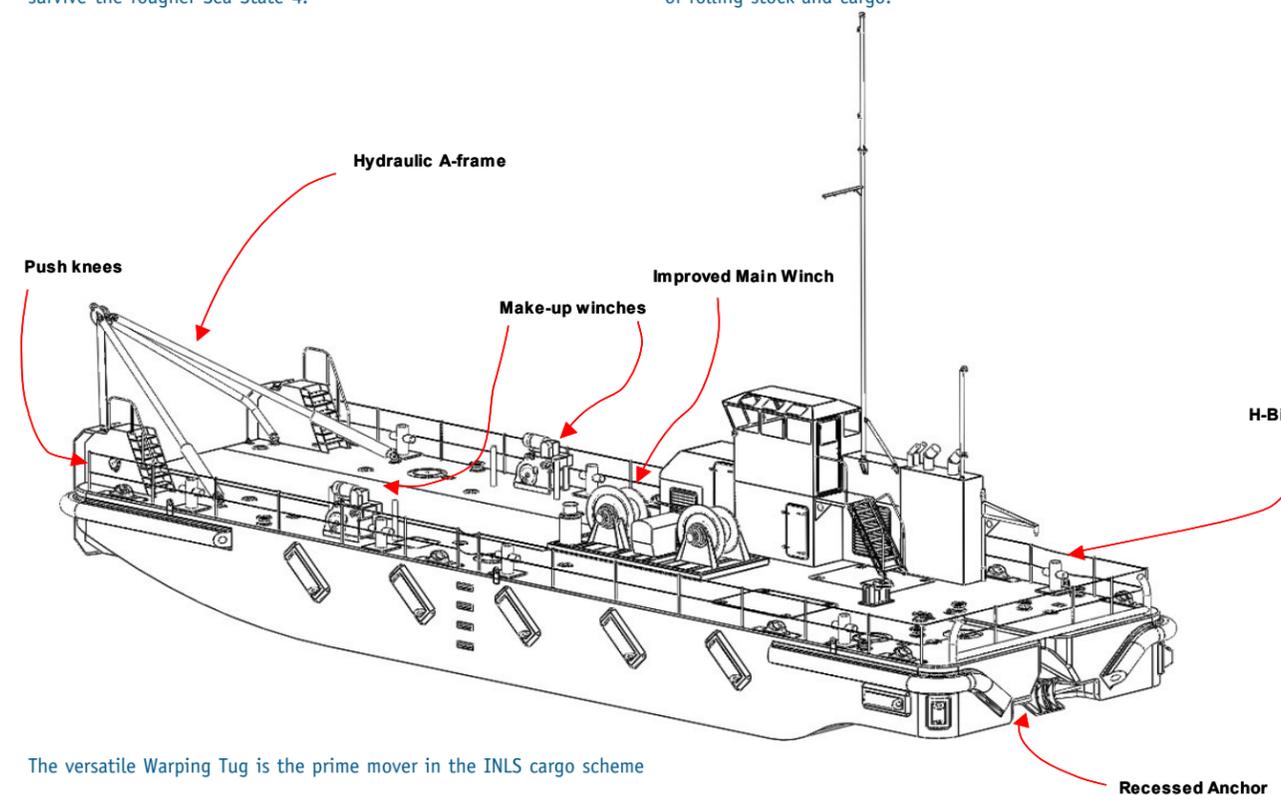
INLS is scheduled for manufacture and

delivery in several stages. The first delivery is programmed for January 2005 with the final deliveries planned in January 2010. Deliveries will be made to the Amphibious Beach Group 1 based at Coronado, Calif., and Amphibious Beach Group 2 based at Norfolk, Va. Other units are planned for delivery to the Blount Island Command, Jacksonville, Fla.

Five companies bid on the INLS contract. Marinette Marine Corporation was chosen because its bid represented the best value to the government.

"We are pleased to have been selected by the U.S. Navy for this important system," said Dennis McCloskey, president of Manitowoc's Marine Group. "This contract comes on the heels of our selection as a finalist in the Navy's Littoral Combat Ship project with our partners Lockheed-Martin, Gibbs & Cox, and Bollinger Shipyards, as well as our recent selection by the U.S. Coast Guard as one of three companies to build a Response Boat Medium prototype with our partner, Kvichak Marine of Seattle.

"We look forward to strengthening our relationship with our customers." ☉



The versatile Warping Tug is the prime mover in the INLS cargo scheme



CIVIL ENGINEER

# update

## NFESC Biobarrier Team Wins Federal MVP2 Award

STORY AND PHOTOGRAPHY BY BRIGETTE MORITZ

The Naval Facilities Engineering Service Center (NFESC) Biobarrier Team was awarded the Most Valuable Pollution Prevention Award (MVP2) from the National Pollution Prevention Roundtable during a ceremony Sept. 17 in Washington, D.C.

The Biobarrier Team included NFESC's Karen Miller, biobarrier project lead, Gail Pringle, Naval Base Ventura County (NBVC)-Port Hueneme base environmental coordinator and Dr. Paul Johnson from Arizona State University, the principal investigator.

Constructed in August 2000 at NBVC, the biobarrier has proven to be 99.9 percent effective in cleaning up methyl tertiary-butyl ether (MTBE) in groundwater. MTBE, a gasoline additive, has routinely been added to gasoline since the late 1970s. MTBE is present in more than 70 percent of the gasoline distributed in the U.S.

"MTBE is a major threat to national drinking water," Johnson explained. "What makes the biobarrier so great is that it can be used both as an environmental cleanup technique or as a pollution prevention technology. That what this award was for."

Johnson added that of more than 700,000 underground storage tanks nationally, more than 400,000 of them are believed to leak.

"The project is a unique partnership between the Navy, Arizona State University and Shell Global Solutions," said Miller. "To know that you can successfully form a partnership from pilot scale to final remedy of the plan in five years is very rewarding."

The team introduced MTBE degrading bacteria using a technology known as bioaugmentation into the groundwater. The bioaugmented area was aerated daily to provide the necessary oxygen to the microorganisms. This created the "biobarrier" treatment system. As the MTBE contaminated groundwater flows through the biobarrier, the bacteria converts MTBE to carbon dioxide and water.

In practical terms, if a gas storage tank is in close proximity of a drinking water well, the biobarrier can be used as a barrier, so that if the underground storage for the gas tank leaks, the water supply is protected.

According to Johnson, ASU joined Shell in its work on biodegradation in the lab, before



California Congresswoman Lois Capps (D-Santa Barbara), left, and Ken Zarker, of the National Pollution Roundtable, right, join the NFESC Biobarrier Team as it's awarded the Most Valuable Pollution Prevention Award at the Rayburn Building of the United States Congress. The team includes (left to right) Steve Eikenberry, Dr. Paul Johnson, Karen Miller, Gail Pringle, Sid Allison and Shun Ling.

joining the Navy in its work on the project.

The base had discovered a problem with its MTBE presence and was looking for solutions when the team approached. Port Hueneme such a perfect place to demonstrate the team's technique for MTBE cleanup and pollution prevention that it became the National Environmental Technical Test Site.

"The base has been the beneficiary of all this," said Pringle. "We were just sitting there with a problem and they solved it."

The biobarrier technology is so successful that it was accepted by the Los Angeles Regional Water Quality Control Board as the final remedy for the MTBE plume at Port Hueneme. With the classic conservatism of California environmental boards a given, the acceptance of the biobarrier program as an approved MTBE remedy is an honestly remarkable achievement.

In addition, the biobarrier project at Port Hueneme saved the Navy more than \$30 million in clean-up costs, according to Miller.

U.S. Senator Diane Feinstein (D-Califor-

nia) congratulated the team in a letter read aloud by California Congresswoman Lois Capps (D-Santa Barbara) during the awards ceremony.

"I want to recognize the Naval Facilities Engineering Service Center in Port Hueneme, Calif., for their cost-effective protection of ground water resources from MTBE and other fuel-related water pollutants," the Senator said in her letter. "This innovative technology is the product of five years of collaboration between the Federal government, academia and industry."

Other awards earned by this team include the 2003 White House "Closing the Circle" Award for Environmental Preferability; Finalist, 2003 Civil Engineering Research Foundation's Charles Pankow Award for Innovation; Society of American Military Engineers; Oxnard-Ventura Post, Project of the Year; Environmental Security Technology Certification Program's Project of the Year; NFESC Project Team of the Year; 2002 Government Technology Leadership Award; and the 2001 National Ground Water Association's Outstanding Project in Ground Water Remediation Award. 🌐

## NAVFAC Southern Division Wins EPA Award for The Village at NTC

Re-using former military bases and addressing the lack of decent and affordable military housing are concerns that many cities and the Armed Forces face. At the San Diego Naval Training Center, the Department of the Navy addressed these issues in a development that serves as a welcome addition to the nearby Point Loma community. In partnership with private developers, financiers, and property management teams, the Navy built a new neighborhood of high quality, affordable military housing on the former base.

That new neighborhood led to a 2003 National Award for Smart Growth Achievement in the Build Category for NAVFAC's Southern Division.

Smart growth is development that serves the economy, the community and the environment. Smart growth development approaches have clear environmental benefits including improved air and water quality, greater preservation of critical habitat and open space, and more clean up and re-use of brownfield sites.

The Village at NTC redeveloped a 50-acre parcel of the historic Naval Training Facility and is part of a much larger city-led Base Reuse Plan.

Designed using principles of New Urbanism and extensive public involvement, the Village contains 500 affordable housing units, a seven-acre site

for a future elementary school, a community center, recreational space, and embraces the Navy Exchange as an existing corner grocery store.

With well-designed public spaces, pedestrian-friendly streetscapes, and regional architectural styles, the Village integrates smoothly with the existing residential and commercial context of the historic city.

Implementation of smart growth principles can be seen throughout the Village. Not only is it located within three miles of downtown on an underutilized urban site, but it is connected seamlessly into the existing urban fabric, and provides access to alternative transportation options and a public school site.

Following traditional neighborhood design, automobile access to the housing is from rear alleys, leaving the building fronts available for features such as porches and landscaping.

Through the public/private partnership, the Village at NTC has provided quality, affordable housing units for military families based in San Diego. The Village has been highlighted in several other Navy publications as a high quality, pedestrian friendly, traditional neighborhood design for military family housing.

Two additional sister neighborhoods based on the design of the Village are

A small park for children.



A pedestrian-friendly street.



planned for other redevelopment sites in San Diego. The Village at NTC acts as a model of design and process for the redevelopment of military family housing — making these attractive military neighborhoods a welcome addition to existing communities. 🌐

Aerial view of the Village at NTC.



# The **FUTURE** of Navy Training



STORY BY JOC RHONDA H. BURKE  
PHOTOGRAPHS BY PH1 MICHAEL A. WORNER

## A massive ongoing NAVFAC construction project brings the Navy's boot camp into the future

The face of Recruit Training Command (RTC) Great Lakes continues to change as part of a nearly \$800 million recapitalization project that began in 1998 and is expected to continue through 2009.

The construction project is not only changing the look of the Navy's only boot camp — it's changing the way Sailors are trained, because it is designed to create a training centric campus that places buildings where they will best support training operations.

"We are charged with a very important responsibility — to train the Sea Warrior of the future," said Rear Adm. Ann E. Rondeau, Commander, Naval Service Training Command, who is responsible for 98 percent of the Navy's accession programs for both officer and enlisted Sailors, with the single exception of the Naval Academy.

"The recapitalization of the Recruit Training Command is allowing us to build a better-trained Sailor who is mentally

and physically fit and better prepared to excel in his or her career, from the time they earn their 'NAVY' ballcap until the day they pass the watch at their retirement," she said.

Camp John Paul Jones (CJPJ) is the largest single portion of the contract, with a construction value of \$200 million. The camp contains seven new barracks or "ships" for recruit living, new infrastructure, roadways, a drill hall and parade ground. The barracks are based on prototypes that opened in late 2002. The Navy expects the first recruit "ship" at CJPJ, named the USS Arizona, to be delivered for occupancy in late January 2004.

The 48-acre parcel was formerly part of the North Chicago Veterans Administration Hospital grounds, and it's located adjacent to the boot camp facilities. A roadway has been created for transit to Camp Porter, the main portion of RTC.

The entrance to CJPJ features two plazas with flags and landscaping

designed to create an modern, aesthetically pleasing and functional entrance to the training area.

Like the prototypes currently in use, each barracks "ship" will be a self-contained facility with its own galley and classroom spaces, reducing transit time now needed for meals and classroom training in separate locations. Additionally within the barracks, two classrooms are equipped as electronic classrooms while the other two will be "traditional" lecture classrooms. The infrastructure, however, has been out in place to provide for conversion to all-electronic classrooms in the future.

"We have worked to design and build these facilities to serve the Navy well into the 21st Century. The buildings are designed for a minimum of 50 years of use," said LT Dan Cook, deputy resident officer in charge of construction (DROICC) for the RTC recapitalization project, a program of NAVFAC Engineering

Facilities Activity Midwest.

Ground was broken for CJPJ in October 2002 and construction began immediately. On any given day there are about 500 workers on the site. Four of the planned seven barracks will be delivered in 2004. According to Cook, during the month of August 2003 alone, \$13 million in construction work in place was completed.

"This is a comprehensive construction project which meets all of the anti-terrorism/force protection requirements for building set-backs and facility design," Cook said.

A designed-for-safety benefit of CJPJ is that there is only one intersection where pedestrian and vehicular traffic will cross, in stark contrast to the many paths that exist in the current RTC footprint, many of which going back to World War II and before.

Each barracks is designed to house 1,056 recruits during normal loading but can accommodate up to 1,512 if necessary during peak training times. Additionally, the

barracks and bathroom facilities have been designed to the new, more generous DoD standard of 72 sq ft of living space per recruit, making the living spaces much more comfortable for learning and training.

The facilities are also climate controlled, in stark contrast to the existing barracks facilities, which were constructed between 1958-1966. In all, 15 barracks facilities will be constructed at RTC over the 10-year period.

The recapitalization program also calls for the construction of three new drill halls, two of which already delivered.

The third drill hall at CJPJ is slated for fiscal year 2006 construction.

Freedom Hall, a state-of-the-art physical training facility, opened in the August of 2002. The design/build contract for Battle Stations 21, a training simulator designed to train Sailors for realistic at-sea emergencies, is scheduled to be awarded in early 2004 with completion slated for late 2006. >>

(Bottom left) Each new barracks facility contains its own galley, eliminating the need for recruits to march to a central galley for meals and reducing time spent waiting in line to eat. (Upper right) The modern quarterdeck of the USS Marvin Shields recruit barracks under construction. (Bottom right) The entrance to Camp John Paul Jones.





**“The recapitalization of the Recruit Training Command is allowing us to build a better-trained Sailor who is mentally and physically fit and better prepared to excel in his or her career from the time they earn their ‘NAVY’ ballcap until the day they pass the watch at their retirement.”**

— Rear Adm. Ann E. Rondeau, Commander, NSTC Great Lakes



Recruits who live in the newer barracks facilities attend classes in electronic classrooms within their “ships,” or buildings. This has eliminated the need for time-eating transit between the ship and a central classroom facility, leaving more time available for additional training.



An open bay barracks compartment under construction. Each barracks will house 1,056 recruits during normal training periods and up to 1,512 during peak training times.



(Above) This aerial view shows the construction of Camp John Paul Jones in early September 2003. The 48-acre addition to Recruit Training Command

will house seven barracks or “ships,” a drill hall and infrastructure to service the RTC complex. (Below) The USS Theodore Roosevelt is the second in a series of 15 spanking-new barracks facilities.



### Ceremonial Drill Hall ‘Midway’ Opens at RTC Great Lakes

GREAT LAKES, Ill. — A Sailor’s graduation from Navy boot camp is perhaps the single most formative event in a career. Our new Sailors now have a spectacular new venue in which to celebrate this special milestone.

A spanking-new, state-of-the-art Ceremonial Drill Hall, named Midway in recognition of the decisive World War II Battle of Midway, June 4-6, 1942, was dedicated during a huge ceremony at Naval Service Training Center (NSTC) Great Lakes Dec. 5, 2003.

The first extremely proud recruit graduation at the Midway was held just one week after completion, hosted by the Honorable H.T. Johnson, assistant secretary of the Navy (installations and environment).

This facility contributes directly to the vitally important recruit training mission. The Midway will be used for all Recruit graduations, and as such, falls in that small group of buildings that every Sailor enlisting in the Navy will pass through. Located in the public area of the Recruit Training Command, this drill hall will enhance NSTC’s training-centric philosophy while serving as a showplace of Navy achievement.

And most importantly, it has increased seating for families and friends to witness the pageantry of recruit graduation.

A “design-build” drill hall costing \$12.4 million, the hall is an open-span steel structure with concrete block and brick veneer exterior walls. It offers more than 63,000 sq ft of enclosed area — a bit more than an NCAA football field — and can accommodate 13 recruit divisions (more than 1,000 recruits) and 4,000 visitors simultaneously.

The futuristic new building features state-of-the-art passive lighting controls, which utilize sensors for energy efficiency; high-efficiency mechanical and electrical systems; direct digital control for management of heating, ventilation and air conditioning; low-maintenance finishes and other materials; and compliance with DOD-mandated anti-terrorism/force protection requirements.

— RHB





## Builders Deploy Tilt-Up Construction Method for Harbor Operations Facility

Unique facility is delivered to Naval Station Mayport

STORY BY LT JORGE R. CUADROS  
PHOTOGRAPHY BY RON CATE

A new \$10.3 million state-of-the-art harbor operations facility was completed and handed over April 23 to the Naval Station Mayport, Fla., harbor operations department. The facility brings to one location an operation that was widely scattered around the base and increases capabilities by providing a new boat ramp on the revamped site.

The construction contract provided for facilities consisting of a small-craft berthing area, a departmental building and all other supporting structures. The 17,000-square-foot building has three floors and a mezzanine that includes administrative spaces as well as the pilot's room, shops and berthing areas for duty sections.

There are also areas for boat repair, welding rooms and hazardous materials storage.

The small craft basin hosts a

wide array of small boats ranging from "C-Tractors" to 15-foot security patrol boats that support the fleet. More than 200,000 cubic yards of material were excavated and disposed of on a permit-authorized site adjacent to the airfield on base.

The Resident Officer in Charge of Construction (ROICC) Mayport office administered the contract. It was accomplished via a design-build provision in which the government gives contractors the basic requirements and essential supporting data to produce a design that the contractor builds with government approval.

One of the unique things about this job was the "tilt-up" construction method used for the main building. Once the concrete slab was placed and cured, the prefabricated sides of the building were erected in a matter of days.



The harbor ops facility during the extensive construction phase.

The excavation of the basin was accomplished in two phases. After all the sheet piling was completed around the perimeter of the basin, the ground water was pumped out of the soil while a "dry" excavation was performed by bulldozers. Loaders then hauled the material off by dump trucks directly to the fill site.

Once the excavation was deep enough, the partial hole was "flooded" (which occurs naturally after turning the pumps off) and a floating crane removed the remaining soil.

This process happened slowly since the excavated material must be de-watered before be

hauled off to the fill site.

The public works office for NAVFAC's Facilities Team Southeast (FTSE) provides maintenance for the new building and its supporting facilities.

FTSE will expand the parking areas around the new facility by employing local Seabees from Construction Battalion Unit 420. The expanded parking area was a new requirement that derived from the increased population of the base.

The Harbor Operations Department will now provide the "Finest Service to the Finest Fleet," from a new state-of-the-art facility. 🌐



Pre-fabricated sides are put up as part of the unique "tilt-up" construction method, which reduces construction time.



The new basin is equipped with a small watercraft floating dock. The new Harbor Operations building is in the background.

## Making a Mountain Into a Molehill

CBMU 202 lent a hand to Sub Base New London with a 100-ft aluminum staircase

STORY BY LCDR RONALD HILL AND EOC KENNETH TORIAN

THE SHORTEST DISTANCE BETWEEN MOST OF SUBMARINE BASE IN NEW LONDON, CONN., AND THE NAVAL AMBULATORY CARE CENTER (NACC) USED TO BE UP A ROCKY INCLINE — WITH A 100-FT ELEVATION DIFFERENCE. THIS DIDN'T STOP PEOPLE FROM TRYING TO NEGOTIATE THIS SHORTEST ROUTE, OFTEN SUBJECTING THEMSELVES TO POTENTIAL INJURY AND THE JOYS POISON IVY EXPOSURE. ALL ALTERNATIVE ROUTES WERE AT LEAST EIGHT TIMES LONGER. ADMINISTRATORS DECIDED TO BUILD A WALKWAY TO HELP PEOPLE WALK UP THE HILL AND MAKE GETTING TO NACC A LITTLE EASIER — AND THAT'S WHEN CONSTRUCTION BATTALION MAINTENANCE UNIT (CBMU) 202, A RESERVE SEABEE UNIT BASED AT THE BASE, GOT INVOLVED.



psi concrete. Sonotube, round cardboard forms, were used as the concrete form for the footings. These tubes required much less effort and material than formwork. Where soil was available, the footings were 42 inches deep, well below the 36-inch Connecticut frost line.

Where footings had to be installed on rock, holes were put in the rock and rebar was grouted in at least six inches. The footings were then attached to the rebar. Seventy-four footings were needed, requiring 12 cubic yards of concrete. All of the concrete was hand-mixed and manually placed.

The structure was built from 4x 4-inch aluminum angle and 12x 4-inch aluminum channel. The angle and channel were cut using a chop saw with a carbide blade. Bolt holes were drilled using a drill press with standard bits. Both tools were located at the construction site and powered from a local utility pole. The all-bolted construction method eliminated the

need to weld. The initial design called for a poured concrete stairway. However, equipment and manpower shortages precluded taking that plan. Instead, the Bees opted to use structural aluminum, with aluminum grating and expanded metal treads. The aluminum could be cut and fabricated using available tools.

Several base departments pitched in. The Public Works Department prepared new drawings, which were based on earlier unused plans. In addition, PWD also supplied the material. Members of CBMU 202 supplied the labor, using annual training and additional duty training time as well as regular drill time. The walkway, 4 ft wide by 350 ft long, has an elevation change of 97 ft that required 180 steps.

Support footings for this walkway are 12-inch diameter, 3000

need to weld.

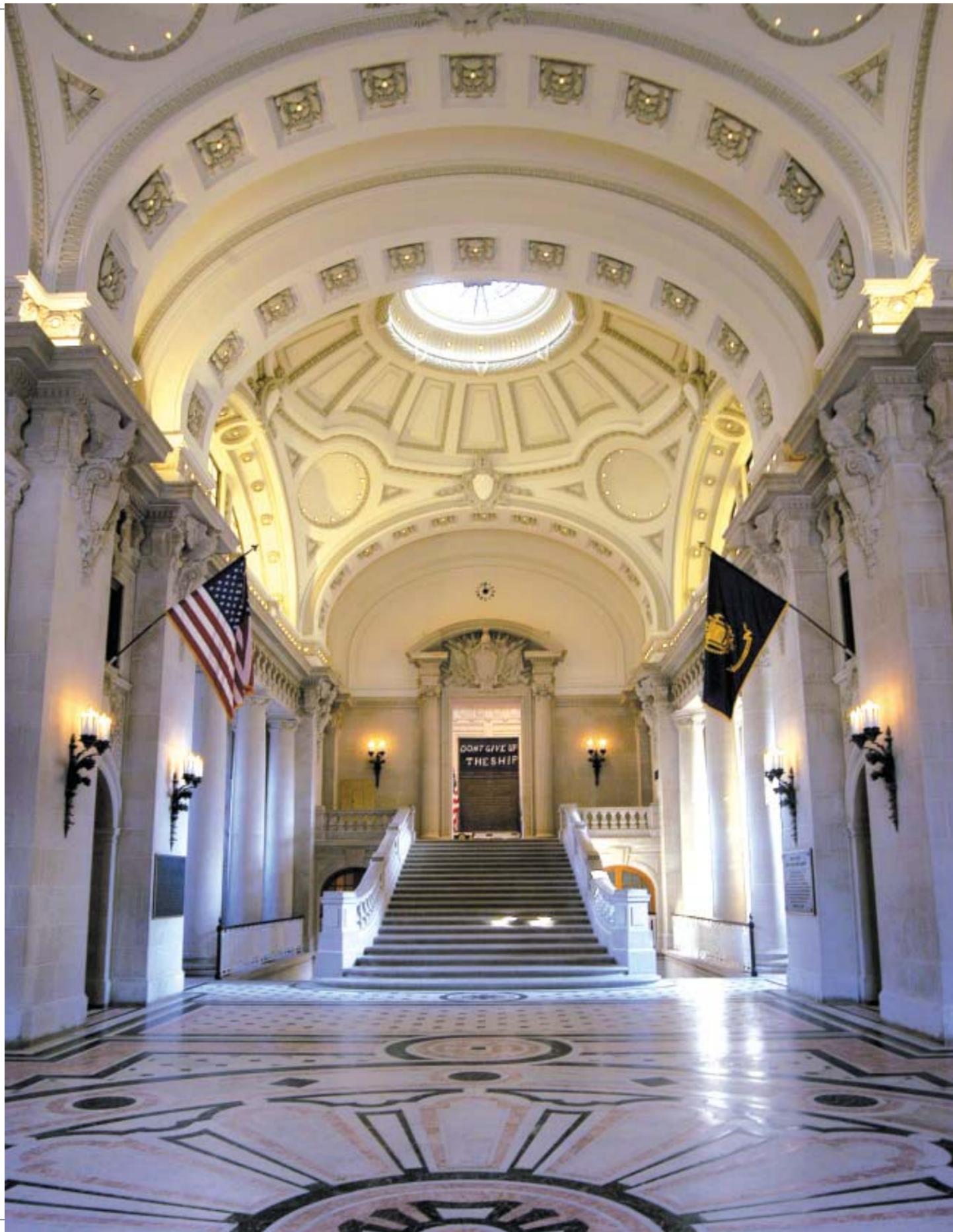
The 11-inch by 4-ft treads were fabricated with nosing installed. The tread height was 7 inches and both steps and treads were held to within a quarter inch throughout.

Light poles, designed to withstand a 90-mph wind, were attached to the side of the walkway so the stairway could be used at all hours.

Aluminum tube railings were installed along the entire length, on both sides of the walkway. The railing was constructed from aluminum tubing and connected using speed rail connectors.

Construction began in the summer of 2002, one of the hottest on record, and concluded in the winter of 2003, one of the coldest on record. 🌐





## A Complete Renovation Restores the Naval Academy's Bancroft Hall to Grandeur

'World's Largest Dormitory' gets updated look and feel

PHOTOGRAPHS BY PH2 DAMON J. MORITZ

ne of the most prestigious and ambitious projects ever for the Engineering Field Activity Chesapeake Resident Officer in Charge of Construction (ROICC) Annapolis has been the complete renovation of Bancroft Hall at the United States Naval Academy.

The world's largest single dormitory, Bancroft Hall has 1,800 dorm rooms to house all 4,000 midshipmen. There are eight wings, totaling 1.4 million square feet that include the living spaces plus a dining facility, medical and dental clinics, pistol and rifle ranges, athletic training facilities, uniform and retail stores, an 18-chair barbershop and a post office.

Under major renovation since the early 1990s, the Bancroft Hall project was a nine-phase effort that spanned nine years and totaled more than \$250 million. The Navy/architect-engineer/construction contractor team joined the Superintendent of the Naval Academy May 15, to cut the ribbon on the spectacular center section, thus bringing to completion this historic project.

Laying the Architectural Groundwork  
In 1845, in hopes of improving the education of Naval officers, the Navy Department acquired a nine-acre tract of land in Annapolis, Md., then known as Fort Severn. The Naval School was established and admitted its first class of 50 midshipmen in October of the same year. One year later, the U.S. Congress recognized the existence of the school by authorizing just over \$28,000 for repairs and improvements to the existing wooden structures.

In 1895, Ernest Flagg, a prominent New York architect, was commissioned to develop an architectural and topographic master plan for a new Naval Academy. His >>



Century-old ornate plaster ceilings, limestone walls, wall sconces, bronzes and busts were cleaned during the renovation.



Historic flags in Memorial Hall have an appraised value in the millions, including the famed "Don't Give Up the Ship" banner. They were cleaned and preserved during the renovation.





plan called for the expansion of the yard by sizeable landfills and showed buildings in monumental French Renaissance style, grouped in functional units, with a new dormitory that was to become Bancroft Hall.

Named for former Secretary of the Navy George Bancroft, whose instrumental efforts helped establish the Academy, Bancroft Hall was originally designed for 480 midshipmen, a mess hall, kitchen, offices and a hall consecrated to the memory of Navy and Marine Corps heroes. Importantly, the design also allowed for future construction of interconnected wings to allow for growth.

Work began on Bancroft Hall in 1901 and finished in 1906 with the completion of the center section and what is today Wings Three and Four.

**Modernization and Restoration**

In the early 1990s, Bancroft Hall was slated to undergo its first major renovation in 40 years due to a growing backlog of unfunded maintenance work, concerns about the age of certain building systems, issues of fire code compliance and the presence of hazardous materials.

RTKL Associates was commissioned to formulate a master plan for complete renovation of the hall. Each wing was to constitute a distinct phase of the project and the schedule was to be driven by the academic calendar: work would start following graduation, proceed uninterrupted for 14 months, and be complete in August of the following year.

This was the most challenging aspect of the project, said Tom Trulli, project manager, ROICC Annapolis.

"The schedule could not slip," Trulli explained. "Each wing had to be back up by the start of school."

In 1961, the Secretary of the Interior notified the Secretary of the Navy that the U.S. Naval Academy had been officially designated a National Historic Site. This designation, established by the National Historic Sites Act (1953) and further expanded by the National Historic Preservation Act (1966), required ROICC Annapolis to closely examine its efforts to restore and preserve the historical significance of Bancroft Hall as a national landmark.

The first phase of renovation started in June 1994 with work on Wing Seven. The scope of work for each phase called for the demolition of the building interior; the removal of any hazardous materials (lead and asbestos); the modernization of all interior finishes plus mechanical and electrical



A lone Midshipman walks through the rotunda of Bancroft hall at the U.S. Naval Academy.



Midshipmen 4th Class Daniel Kobza and Bill Lipstreu speak with their leading senior chief petty officer while doing homework and shining shoes in one of the newly renovated dorm rooms at Bancroft Hall.

systems; and the installation of a data and telecommunications network capable of supporting current and future technologies.

Each building was completely gutted and new state-of-the-art mechanical and electrical replaced the old, outdated systems. New roofs replaced the old.

"The only thing that remained in the buildings after demolition were the columns, slabs and exterior granite and walls," Trulli said.

**Final Phase Complete**

Phase nine, the last of the Bancroft Hall renovation, was in many ways the most monumental and challenging. The final contract was awarded to Whiting-Turner Con-

tracting Company in March 2002, and focused on the renovation of the Center Section of the Hall, including a grand Rotunda, Memorial Hall and Smoke Hall. Memorial Hall commemorates great Naval battles and honors Naval Academy alumni who have given their lives in the service of their country. It is the site of solemn ceremonies that dedicate each graduating class to service before they are commissioned.

Prior to this final phase, the restoration and preservation efforts of the team were focused primarily on the building's exterior. In phase nine, the focus was on the grand interiors, including century-old ornate plaster ceilings, limestone walls, wall sconces, bronzes and busts.

Most significant was the cleaning and conserving of the historic flags in Memorial Hall, appraised at \$3 million, including the famous "Don't Give Up The Ship" flag.

In addition, all the lighting in the Rotunda was replaced with fiber optic lights. More than 500 individual light bulbs had lit the historic Rotunda. Now, only 40 fiber optic lights give the space its new glow.

"They look better and last longer," Trulli said. "They are also safer to use because they are easily accessible and easier to maintain."

Smoke Hall was totally opened up to make

The century-old ceilings in Memorial Hall were repainted and repaired and limestone walls were cleaned and polished. As much care went into the rehab as in original construction.



it look like it did when it was first built. The false walls and ceilings were removed.

In addition to the structural improvements, functional improvements also found their way into the renovation. To improve the acoustics of Memorial Hall, custom-made speakers were placed along the wall. New lights were added to better illuminate

plaques and paintings that adorn the walls. Lighting schemes can be changed to accommodate each different type of ceremony held in Memorial Hall.

The ROICC Annapolis Bancroft Hall team, led during the last three phases by Lt. Miguel Dieguez (USNA 1997), utilized a fast-track, design-build approach. Capitalizing on lessons learned from previous phases, the team commenced construction even as the design effort progressed.

All construction was completed in just 12 months and they were able to turn over the student union spaces in the building basement six months before contract completion, a major quality of life amenity for Midshipmen.

According to Dieguez, the project was one of the Navy's single largest renovation projects on one building both in dollars and duration. "Working on Bancroft Hall was the opportunity of a lifetime," he admitted. "You can't help but get a sense of awe from the grandeur of the space." 🌐



Midshipman 1st Class Lindsay George, from Boston, Mass., walks in front of renovated Bancroft Hall.



# Izzie's Smackdown

## How two commands survived a tough date with Hurricane Isabel

When Mother Nature decided to whistle a little tune, she really let one blow.

**B**efore Hurricane Isabel blew through the Virginia-Maryland area the week of Sept. 20, the historic Washington Navy Yard in the District of Columbia hadn't experienced a bad flood since the World War II year of 1942. On the U.S. Naval Academy campus in Annapolis, Md., several flooded buildings had recently been extensively renovated.

During Izzie's visit, 7-ft storm surges from the Severn River in Annapolis caused massive damage to the Naval Academy, and the Anacostia River flowed over the Navy Yard like it owned the place. For several days, it did. Following the hurricane, some parts of the 338-acre Naval Academy campus were under seven to eight feet of turbid water. Buildings were sandbagged, but officials at both locations say they couldn't have anticipated the storm's fury.

"I came over the Naval Academy Bridge Friday morning after the storm and saw that the river had come over the road," said Resident Officer in Charge of Construction Annapolis Cmdr. Rick Burgess. "The water was lapping at the doorsteps of these buildings! We were surprised at the amount of flooding."

Large portions of the Naval Academy yard flooded, including the ground floor of many of the academic buildings and Bancroft Hall, the dormitory for the midshipmen. In addition, the campus utility tunnels, which run under the buildings, were severely flooded.

Those tunnels house vital equipment, such as high-temperature hot water lines and a central chiller plant for air conditioning. Both were badly damaged.

Hot water and heat were limited for a time due to the damage to the insulation and there is still no central air conditioning in some buildings because of the damage to the chiller plant.

In November, Congress approved legislation providing \$68.2 million for the recovery efforts at the Academy.

According to the Burgess, contractors worked around the clock to install insulation, a priority in order to keep hot the water running through the hot water lines.

Some of the oldest classroom buildings at the Academy received heaviest flooding damage. Four feet of water flooded all the engineering labs, which house expensive equipment like wind tunnels and wave tanks, and spoiled chemicals in the chemistry labs.

The dental treatment facility in Bancroft Hall, the nation's oldest dormitory, was completely destroyed. Those offices had been renovated only a year earlier. They would have to be torn out and renovated once again.

Officials expect repairs to the central air conditioning chiller plant, to cost approximately \$40.9 million. It will take about six months to get the plant repaired and in service.

"It is a significant and daunting task to get the Academy



Flood waters from the massive storm surge caused by Hurricane Isabel fill a corridor between Chauvenet and Michelson Halls that is normally filled with Middies. This is the heart of the U.S. Naval Academy's physics,

back to what it was before the storm," said Burgess. "I have been very pleased with the progress, however. Not even 12 hours had passed and we had a team of ROICC, public works, Seabees and contractors working to put the Academy back together." The widespread damage didn't faze the midshipmen. They were back in classes the Monday following Izzie's short visit – even with holes the walls and construction all around.

Some classrooms were damaged too severely to have students. Those classes were moved to temporary locations — including a 360-ft barge refitted to house classrooms and laboratories. Other students have at-

tended some laboratory classes off campus.

Burgess didn't have a completion date for recovery efforts at the Academy, but said it wasn't expected to take too long.

"We've still got a ways to go, but we're well on our way," he said.

### Washington Navy Yard

Isabel dropped approximately three inches of water on the District of Columbia — but when the Anacostia River surged over of her banks, many buildings on the historic Navy Yard were flooded significantly more than just three inches.

The Navy Yard was hit hard by Isabel's fury owing to a combination of circumstances. The storm moved up the Chesapeake

chemistry, math and computer science departments. The Academy suffered extensive, catastrophic flooding and wind damage throughout the campus. CEC officers, U.S. Marines and Seabees helped repair some of the damage.

Bay, essentially putting an invisible cork in it. As it blew further up the bay, it moved water up the bay in addition to keeping water from flowing downriver.

With high tide arriving at exactly the wrong time, the Navy Yard just happened to be on the worst side of the backed up Anacostia River and the worst quadrant of the District of Columbia for the wind.

Seabees from CBU-422 spread plastic barriers secured by sandbags around Navy Yard buildings to what was said to be the "100-year flood" mark.

The measures may have held back a few gallons, but eventually, they couldn't withstand the storm pressure.

More than half of NAVFAC headquarters, including 150-160 people, were displaced by damage caused when flooding invaded the first deck of the headquarters building.

Other buildings on the Yard took as much as eight inches of flooding on their first floors. Cars left in the parking garages became submarines — especially those remaining in sub-levels left level with dark water.

Large air blowers were brought in to dry out the brick walls and floor areas. Once dry, four feet of sheet rock was replaced in some areas with durarock or cement board, which better resists water. Reconstruction and repair was completed in December. 🌐



A lone kyaker surveys the storm surge that flooded parking lots and buildings along the Naval Academy seawall after Isabel blew on by.



At NAVFAC, gigantic generators powered equally huge dehumidifiers that forced hot, dry air into the spaces behind drywall and under the false floors, where inches of water inundated computer cabling.



NAVFAC workers toiled under plastic sheeting while reconstruction ensued (L). Bees from CBU 403 and Marines cleared away Academy debris after Isabel took down trees and flooding many buildings.

Below, massive flooding occurred after a 1942 storm. The water backed up well onto the Navy's Anacostia Annex campus (upper part of photo) and inundated the Washington Navy Yard to significant depth.



U.S. NAVY PHOTOS



PHOTOGRAPHS BY PAUL PEARSON



A revolutionary tension-fabric structure protects Marine Corps planes.

## PAX RIVER V-22 'OSPREYS' GET A HIGH-TECH NEW HOME

THE REVOLUTIONARY V-22 "OSPREY" AIRCRAFT, located at Naval Air Station Patuxent River, needed an equally innovative place to call home. The Patuxent River Facilities Team and J.A. Jones Management Services rose to the challenge by erecting a 29,700-sq-ft relocatable, tension-fabric structure on budget and in just four months.

"The foundation of the V-22 program is the hard, honest work of its people," said Marine Col. Dan Schultz, former V-22 program manager, at the ribbon cutting. "The project we are recognizing today is no exception. The Joint Program Office, Integrated Test Team, Public Works, Engineering Field Activity Chesapeake and contractors all came together as one team to produce this incredible facility."

NAVFAC's Engineering Field Activity Chesapeake awarded the \$2.9M contract to general contractor J.A. Jones in February, and the innovative hangar was turned over to the V-22 team at the end of June.

The gable-end fabric structure is connected to the existing airfield apron, and has a life span of approximately 10 years. It can house two V-22 aircraft as

well as testing and maintenance equipment. J.A. Jones and McGrath Construction teamed with Summit Structures LLC, based in Center Valley, Penn., to build the hangar

and meet the crucial deadlines set for each stage of design and construction. Summit constructed the main hangar using a Series 6 Titan frame, built in



The new V-22 Osprey hangar at NAS Patuxent River will provide relocatable office space for support personnel.



The versatile V-22 "Osprey" aircraft rests in its new hangar at Naval Air Station Patuxent River the day it was turned over from its builder to the Marine Corps. NAVFAC's EFA Chesapeake was one of the principal offices coordinating and managing the high-tech hangar's construction.

*"The foundation of the V-22 program is the hard, honest work of its people. The project we are recognizing today is no exception. The Joint Program Office, Integrated Test Team, Public Works, Engineering Field Activity Chesapeake and contractors all came together as one team to produce this incredible facility."*

— Marine Corps Col. Dan Schultz, former V-22 program manager

accordance with detailed military specifications and in compliance with regional building codes.

For the exterior fabric membrane, Summit's Duraweave FR fabric provides the Navy with warranted durability and cost effectiveness. The interior of the structure includes a Duraweave FR thermal/acoustic liner that provides a bright, easily moderated interior surrounding the sensitive Osprey aircraft.

In addition to simply housing the aircraft, the Summit structure incorporates a state-of-the-art automated fire-extinguishing system designed by Virginia Sprinkler, plus storage areas for supplies and maintenance equipment, office equipment, lighting and ventilation.

In order to allow for unimpeded movement of the Osprey, Summit teamed with MegaDoor for the massive overhead

openings, each measuring 3 ft by 100 ft. The MegaDoors are constructed of a durable PVC membrane and are supported by a robust steel header designed by Summit.

The completion of the hangar marked the end of the second phase of V-22 project work being done by the Patuxent River Facilities Team. The first phase provided the team with relocatable office space, allowing members of the project team, government, and contractors to be co-located with each other at the Osprey hangars.

In addition to the large tension fabric hangar, the second phase included construction of two smaller fabric structures by McGrath Construction Company.

The team also has broken ground on the final phase of the project — a parking lot to support the Integrated Test Team employees. 🌐



Snipping the ceremonial ribbon are Marine Corps COL Dan Schultz, former V-22 program manager, left, Frederic Madenwald, director of the V-22 Integrated Test Team, and RADM Tim Heely, Commander Naval Air Warfare Center Aircraft Division and Assistant Commander for Research and Engineering, Naval Air Systems Command.



## ROBOSKI! Unmanned surface vehicles from NFESC offer broad capability



A ROBOSKI/SWAT (Small Weapons Attack Trainer) prototype tows a "Killer Tomato" demonstration target during a testing and development exercise. The "Killer Tomato" is a large orange balloon used as a target during live-fire weapons targeting exercises — and thus ideal for use behind a maneuverable, cost-effective — and unmanned — towing vehicle.

THE NAVY'S SEA SHIELD concept for ensuring uninterrupted operational effectiveness calls for defending U.S. Navy assets across the globe. The "One Sea Shield" strategy is to develop a first-line-of-defense technology.

Enter the highly mobile family of Unmanned Surface Vehicle (USV) from NAVFAC's unique Naval Facilities Engineering Service Center (NFESC).

This highly innovative program supports intelligence and force protection functions through remotely operated at-bay detection, surveillance and interdiction.

This vision of interactive force protection includes a family of unmanned waterborne vehicles — from small drones populating a sensor grid to large, combat-ready craft sporting a full complement of mission capabilities.

In this set-up, one operator "piloting" remotely would oversee or control one or more essentially autonomous USVs. Substantial unmanned vehicle capabilities can provide an extensive menu of enhanced mission-oriented services, including a combination of dispersed and distributed sensing, communications — and combat firepower that would support and enable follow-on operations.

Emerging USV technology from NFESC offers the double security of *increasing* protection to fleet assets while *decreasing* personal risk to individual warfighters operating remotely. It's an impressively effective force multiplier.

The Navy is accelerating development of its Spartan Scout USV. The program recently received \$36 million to develop and demonstrate up to four USVs with typical mission-oriented payloads in an Advanced Concept Technology Demonstration. Spartan technology will integrate basic defense systems and weapons into existing high-speed, 7- or 11-meter Rigid Hull Inflatable Boats (RHIB).

Operating remotely or autonomously, by day or by night, the Spartan will deploy a mix of interchangeable mission modules for intelligence, surveillance, reconnaissance, force protection, mine warfare and precision strike capabilities.

Depending upon which length of RHIB is used, Spartan is expected to operate on station from eight to 48 hours, within a range envelope of 150 to 1,000 nautical miles, and at speeds between 28 and 50 knots. Payloads are estimated between 2,600 and 5,000 pounds.

The Spartan is a large-scale effort that

promises substantially improved and more sophisticated fleet security in the littorals, though the program is a downstream solution that may not be operational for a number of years. Meantime, there is an immediate fleet need for a protective blanket of security while operating within the confines of foreign coastal waters.

### Unmanned Surface Vehicle-Small

There are a number of interesting initiatives for developing a smaller-sized USV capable of performing a variety of security-related tasks, including detection, data collection, tracking, surveillance and deterrence.

"Generic" USV-S platforms may well fulfill that requirement. Most likely limited to fewer mission-specific payloads than those carried by larger USVs, they won't compete with the full-spectrum functionality of the multi-mission Spartan Scout. Instead, they become effective partners by providing added functionality, upgraded overall performance and important system redundancy.

Against today's known threats, NFESC USV-S technology offers an opportunity to quickly fill current and future maritime security gaps and offering up an expedient inventory of testing platforms.



Basically an unmanned jetski, the ROBOSKI can be easily stored and launched from nearly any vessel. It can carry GPS receivers and autopilots, advanced electronics, a video camera and weapons. This is a sophisticated, cost-effective solution that offers expanded capabilities up close and personal in shallow waters — while keeping a warfighter out of harm's way.

### USV-S Team at NFESC

The USV-S Team at NFESC specializes in developing small, unmanned surface vehicles for a broad spectrum of applications. Working closely with the fleet, NFESC's experts extract accurate requirements that meet realistic needs, rapidly develop prototypes, perform systems integration, conduct user tests and evaluations, and provide transition and life-cycle support.

"The Unmanned Surface Vehicle is the product of a remarkable team effort, bringing together some of the most innovative minds in government and industry," said CAPT William J. Beary, commanding officer of NFESC. "It's exciting to see what can be done with that level of cooperation. This team enjoyed the challenge and responded with a solution that can be quickly adapted to meet a number of applications."

Beary said it only took the team two months from receipt of the requirement to deliver a working USV system.

"The Unmanned Surface Vehicle technology is a perfect example of how to quickly translate an idea into a technical solution ready to support the fleet. This was the right team to make that happen," Beary said.

### ROBOSKI/Small Weapons Attack Trainer

Developed through the Office of Naval Research Tech Solutions Program ([www.onr.navy.mil](http://www.onr.navy.mil)), the ROBOSKI/SWAT is a remote-controlled personal watercraft that functions as an inexpensive and,



SEAFOX

when necessary, expendable Ship-Deployable Surface Target (SDST) for ship-board gun systems. It is fundamentally a jet ski without a rider, retaining all the characteristics of high-speed and maneuverability inherent in the manned recreational vehicle.

At a weight of just 460 pounds, the SDST is easily stored and launched from nearly any vessel of opportunity; at a top speed of 42 knots, the towed target (dubbed the "Killer Tomato" because it resembles the oversized "killer tomatoes" in a cheesy science fiction movie from the '70s) provides a challenging target for Navy guns and engaging training opportunity for ship's crew.

In missions of force protection, the Roboski may also be outfitted as a USV-S and deploying options such as GPS receivers, advanced electronics, intuitive control, optional video camera and other features required for intelligence and deterrence.

### ROBORAIDER

The ROBORAIDER is a remote-controlled rubber-raiding combat craft powered by a diesel outboard. When equipped with a GPS autopilot, electronic engine control and RF modem, the ROBORAIDER can significantly enhance battlespace awareness by carrying networked sensors into shallow coastal waters. Anticipated modular payloads may also include decoys and a weapons suite.

The ROBORAIDER is expected to operate on station from eight to 24 hours, within a range of 15 to 150 nautical miles, at speeds up to 18 knots with payloads as heavy as 2,000 pounds.

### SEAFOX

Also developed through the ONR Tech Solutions Program, SEAFOX is a remote-controlled, 16-foot jet boat powered by an innovative JP-5 propulsion system. This robust USV platform can perform a wide range of open-ocean missions, including towing a target for aerial gunnery training against small craft/swarm threats. NFESC recently demonstrated the SEAFOX at the Multi-Agency Craft Conference where it received rave reviews and national media coverage.

### The Future of USV-S is bright

These and other USV-S technologies can improve fleet readiness and security by providing realistic training, better situational awareness and other innovative solutions to critical mission objectives.

Small USVs of the future will host an increasing number of sophisticated and interchangeable modules supporting such diverse missions as antisubmarine warfare, mine warfare, torpedo defense, and precision strike, intelligence, surveillance and reconnaissance.

Individually and collectively, NFESC's smaller unmanned vehicles can contribute to a seamless electronic net of perimeter security, shielding the fleet from such attacks as experienced in the mid 1980s by *USS Cole*.

USV-S platforms are ideal test beds for existing technology and can be quickly inserted deployed to the fleet today. Their testing and evaluation may be used to demonstrate operational capabilities, isolate technical deficiencies, identify industry standards, and develop common interface structures.

In the long haul, they may illustrate the truth in the concept of strength in numbers. 🌐

# The Last Page:



RADM James M. Walley, Jr., CEC, USNR, Deputy Commander for Contingency Engineering and Deputy Chief of Civil Engineers, went ashore for the last time during his retirement ceremony at NAVFAC. Walley retired Sept. 19, 2003, after 38 years of Navy service.



Our own Master Chief Petty Officer of the Seabees, Harrell T. Richardson, has been selected by the MCPON to be Force Master Chief Petty Officer of the Seabees. This is the first Force Master Chief designation for the Seabee community since the early '80s.



Public Works Center Washington, DC, has completed a whole-fleet change-over to alternative-fuel vehicles, both for executive motor pool and the work-a-day PWC fleet.

RADM Michael R. Johnson, CEC, USN walks out of the new Catering and Conference Center at the Washington Navy Yard. The outgoing Commander of NAVFAC and Chief of Civil Engineers retired from active Navy duty Oct. 24 with nearly 34 years of service.

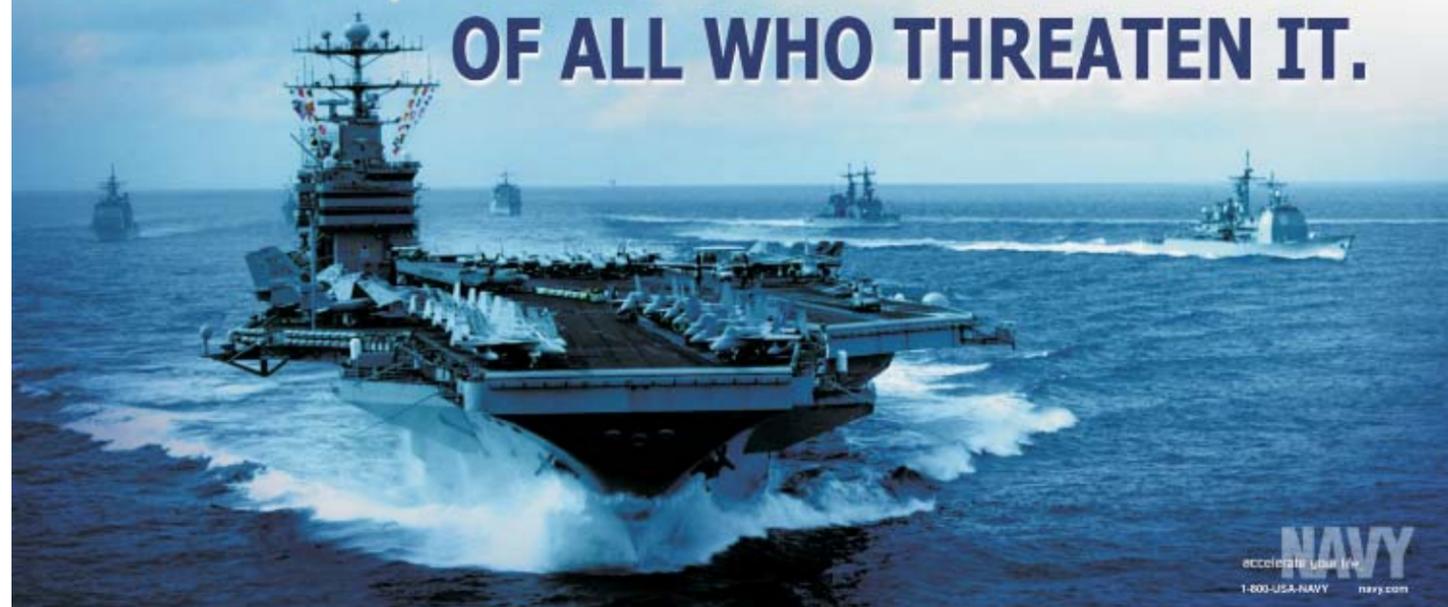


RADM Michael K. Loose, Commander NAVFAC, Chief of Civil Engineers — and King Bee of the Seabees worldwide — made the command's annual Veteran's Day pilgrimage to the Seabee Memorial near Arlington National Cemetery to lay a commemorative wreath with Master Chief Petty Officer of the Seabees Harrell T. Richardson. A big contingent of Navy Seabee Veterans of America (NSVA) and Vietnam Era Seabees provided a large gallery of participants, family members and spectators.



Among the latter was former E02 Dutch Van Tassel (center, in "Navy Seabee" ball cap), who served as a Seabee in Vietnam circa 1967-69. Arrayed around him and RADM Loose are his supportive colleagues from the Road Dogs Motorcycle Club of Southern Maryland. From left, Russell Selig (USN 1976-80; 2001 Harley-Davidson FLH TC1); Brett Willette (USAF, 1984-98; '03 H-D FLS); Al Kincaid (USANG 1965-66, USN '68-69; '86 H-D Liberty); Don Bowen ('88 H-D Police Special); Chuck Appelle ('03 H-D FLH-T); and Dan Williams ('03 H-D Super Glide). U.S. NAVY PHOTOGRAPHS BY JOC DANIEL CHARLES ROSS (4)

## LIFE, LIBERTY AND THE PURSUIT OF ALL WHO THREATEN IT.



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