

EXWC  
**EDGE**  
Magazine

FALL 2025



**ANTICIPATE - INNOVATE - ACCELERATE**



ISSUE #0011



In this issue

- Welcome Letter
- Innovative System for Treating PFAS-Impacted Water
- From Intern to Senior Executive: Technical Director Kail Macias
- MUSE Provides Expert Technical Support to Tongan Hospital
- FATHOMWERX Summit Highlights Collaboration, Innovation
- Test, Evaluation of Modular Barge System
- Geothermal Program Office Supports Readiness of DoN, DoW
- Top CNIC Official Ms. Lutz Discusses Advanced Technical Expertise, Unique Solutions
- Supporting Crucial Inspection Mission in the Columbia River
- Honoring the Legacy: Restoring World War II Fighting Seabee Statue
- Key Navy Leader Mr. Reddy Discusses Future Readiness, Technological Advancements
- MUSE Provides Critical Power Support to Rota
- NAVFAC MIDLANT Tests Smart Skimmer Developed by NAVFAC EXWC
- Fair Winds and Following Seas & Congratulations!
- NAVFAC EXWC Deploys Web-Based Version of ESS Software Developed at EXWC
- Did You Know: Trackage Program



Photo: The South Pool of the Coso Hot Springs, within the boundaries of Naval Air Weapons Station China Lake (NAWS China Lake), part of the geothermal activity of the Coso Volcanic Field.

INTERESTED IN CONTRIBUTING A STORY?

Have a question or comment?

Contact us at: [EXWC\\_Public\\_Affairs@us.navy.mil](mailto:EXWC_Public_Affairs@us.navy.mil)  
Official NAVFAC EXWC website: <https://exwc.navfac.navy.mil/>



EXWC EDGE MAGAZINE IS AN OFFICIAL PUBLICATION OF THE NAVAL FACILITIES ENGINEERING AND EXPEDITIONARY WARFARE CENTER



Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC)  
1000 23<sup>rd</sup> Avenue  
Port Hueneme, CA 93043

EXWC Edge is produced by the Public Affairs team at NAVFAC EXWC

Managing Editor:  
Lisa Ferdinando  
NAVFAC EXWC Public Affairs Officer  
Graphic Artist and Designer:  
Ruby Hunt  
Dawson Ohana, LLC

LEADERSHIP



Captain Dean E. Allen  
COMMANDING OFFICER



Kail S. Macias  
TECHNICAL DIRECTOR  
(SENIOR LEADER)



Captain Constance L. Solina  
EXECUTIVE OFFICER



Master Chief Scott Weisenburg  
COMMAND MASTER CHIEF

A MESSAGE FROM

Kimberly Jacobsen  
NAVFAC EXWC Shore Technical Department Head



As head of the Shore Technical Department, I'm very excited to introduce this edition of the EXWC Edge. This year was a strong year for Shore and NAVFAC EXWC in supporting the Fleet and warfighter and it keeps getting stronger!

In Shore, we provide research, development, testing and evaluation, in-service engineering and life-cycle management for shore domains, including Utilities, Energy, Facility Systems, Environmental Resilience, and Cyber Security/ Cyber Engineering. With such a diverse and growing portfolio of work, we have opportunities for almost every type of engineer, scientist, technician, and financial and administrative professional.

We are proud to be a part of the command-wide work of leading innovation to support the Department of Navy (DON) and Department of War (DoW). Shore and the other Technical Departments proudly showcased their remarkable accomplishments and programs recently during visits from Deputy Assistant Secretary of the Navy for Research, Development, Test and Engineering (DASN RDT&E) Peter

Reddy and Director of Operations for Commander, Navy Installations Command (CNIC) Marjorie Lutz.

Through our successes and these types of high-level engagements we spotlight and advance our incredible work and expertise. For example, NAVFAC EXWC Shore is now recognized as the technical experts in several important programs to name a few supporting DoW: geothermal energy, Mobile Utility Support Equipment (MUSE), DoW Lock program, Explosive Safety Siting, Bulk Fuel Facilities, per- and poly-fluoroalkyl substances (PFAS) treatment technologies and control system cybersecurity protection.

You can see stories about these topics, as well as many more inside these pages. This edition touches just a small portion of the hundreds of programs and initiatives at NAVFAC EXWC, highlighting achievements in Shore, and the other Technical Departments, Expeditionary and Oceans. We also celebrate those who make it all happen – Congratulations to our talented teammates on their many accomplishments!

In FY26, I'm excited to see NAVFAC EXWC continue to deliver rapid, innovative solutions that enhance readiness and warfighting. NAVFAC EXWC will lead the implementation of NAVFAC HQ strategic initiative Line of Effort 2-2B, centralizing all NAVFAC inspection programs at NAVFAC EXWC over the next year.

We will incorporate and develop Artificial Intelligence, Automation, Unmanned Systems, Machine Learning, and Advanced Manufacturing tools in all domains. In alignment with SECWAR priorities, NAVFAC Chief's strategic initiatives, and CNIC/NAVFAC HQ's Acceleration and Affordability Campaign Plan (AACP), NAVFAC EXWC has been charged with leading the way to innovate and execute programs in support of the Fleet and warfighter.

None of this is done in a vacuum of course. Our extraordinary successes are due to great collaboration with our customers, warfare centers, operators, Naval Research and Development Establishment (NR&DE) Labs, academia, and private industry, plus the incredible support from all areas within NAVFAC. In the article on the FATHOMWERX Summit, you will hear straight from our Commanding Officer Capt. Dean Allen and Technical Director Kail Macias about the vital need for collaboration and rapid innovation in today's ever-evolving technological environment.

Speaking of TD, a big thank you to Mr. Macias who is hanging up his NAVFAC EXWC lab coat after four decades of accomplished service to our nation. We wish him a much-deserved bike-riding-across-the-world next chapter, though we know he'll be pulled back into innovation even in retirement. Thank you for your brilliant guidance, mentorship, enthusiasm, insights, connections, and pushing us always to find ways to do things better. We salute your lifetime of service and look forward to seeing you back in the lab soon!

Very Respectfully,

*Kimberly Jacobsen*

Kimberly Jacobsen  
Senior Scientific Technical Manager  
NAVFAC EXWC Shore Technical Department Head

ACCELERATE INNOVATION TO ENABLE FLEET LETHALITY AT SEA AND ASHORE





NAVFAC EXWC Environmental Engineer Cortland Navarette, Engineering Technician Denis Acosta, and Project Engineer William (Hunter) Spence pose for a photo in front of the PETS III system at NAVFAC EXWC, before its deployment to Japan, Oct. 2024.

## NAVFAC EXWC Designs, Builds Innovative System to Treat PFAS-Impacted Water

By Itzel Godinez, PhD, and William (Hunter) Spence, PE



Engineering Technician Denis Acosta works on the PETS III while Dr. Itzel Godinez oversees during testing at Naval Air Facility Atsugi, Japan, Oct. 2024.

**N**AVFAC EXWC engineers and technicians from EXWC's Shore Department – SH31 Environmental Compliance and Services – designed and built an innovative, trailer-mounted system to treat PFAS-impacted waters derived from land-based fire suppression systems, such as those used in hangars and on firetrucks.

The PFAS Effluent Treatment System (PETS) III is a mobile system intended to remove per- and polyfluoroalkyl substances (PFAS) from waters impacted with aqueous film forming foam (AFFF) at low to medium PFAS concentrations and low presence of co-contaminants such as total organic carbon, total suspended solids, and total dissolved solids.

By removing low- to medium-range-concentration PFAS from large volumes of impacted waters, PETS III is expected to help avoid the disposal of an estimated 710,000 gallons of PFAS-impacted waters for a projected net savings of \$2.6 million over the course of its current deployment at Naval Air Facility Atsugi, according to the project's Program Manager and PFAS Subject Matter Expert Dr. Itzel Godinez.

“PETS III consists of a specialized treatment train that supports the treatment of PFAS-impacted waters. The treatment train comprises pre-treatment, filtration and sorption media. Each treatment step is a modular skid arranged on a trailer,” Dr. Godinez said.

“The latter provides the flexibility to make adjustments to the treatment train in future iterations of the system to target specific PFAS discharge requirements,” she said. “Currently, we are also exploring variations to the treatment train to comply with both PFAS discharge requirements and specific chemicals present in fluorine-free foams (F3) that have discharge requirements.”

The PETS III works by pumping water out of a wastewater pond and processing via screening, foam fractionation, filtration, granular activated carbon, and ion exchange resin. The system features a more advanced fluid handling system with independent variable speed pumps for the fluid intake and treatment process feed flows. The system has various pressure sensors and flow meters that allow for automatic sensing and regulation of intake flows, process feed flows, fluid pressure, tank fill levels, and treatment media changeout intervals.

“I am proud to say that the PETS III system was designed and built entirely in-house by our team. To make this possible, we had to learn and apply quite a number of new technical skillsets and often improvise solutions when our planning and design work needed revising,” according to Senior Project Engineer William (Hunter) Spence, who served as the project's system design and fabrication technical lead.

“Being directly involved in all phases of the effort allowed us to quickly pivot, revise, and iterate as needed to keep things on track and meet our deadline. While this project was very challenging, the opportunity to go from designing a system to physically building, configuring, and testing our designs was an

invaluable learning experience. The new skillsets we gained and lessons learned have made our team much more capable,” he said.

The PETS III is based on designs by the Army Engineer Research and Development Center (ERDC) for its PETS mobile system designed to address PFAS contamination in water. The EXWC team advanced this technology by reconfiguring the treatment train, which now includes a pre-treatment step to avoid premature fouling of the filtration and sorption media

steps, ruggedizing the system, and making its PLC/HMI more user friendly.

“As delivered, the reconfigured system is the smallest and most portable trailerized water treatment system that features a foam fractionation pre-treatment step. Integrating this process while still fitting the system in a standard high-cube shipping container was a big challenge that required rethinking both the original pipe connections, pumping scheme, and the control system,” Spence noted.

The system took three years to design, build, test, and deploy. The PETS III was subjected to shakedown testing and manual start-up operations of the different treatment steps at EXWC before shipping overseas.

EXWC deployed the PETS III to Naval Air Facility Atsugi in October 2024 and hopes to deploy additional units based on customer needs.

PFAS are a large class of chemicals found in many consumer products, as well as in industrial products such as certain firefighting agents called aqueous film forming foam, or AFFF. They are long-lasting chemicals and scientific research suggests that exposure to certain PFAS may be harmful to human health.

The U.S. Department of the Navy (DON) is implementing a comprehensive strategy to manage and address the known or potential presence PFAS from DON activities on Navy and Marine Corps installations, facilities, and bases nationwide. ♦

I am proud to say that the PETS III system was designed and built entirely in-house by our team.

— William (Hunter) Spence  
NAVFAC EXWC Senior Project Engineer



NAVFAC EXWC Project Engineer William (Hunter) Spence stands in front of the PETS III after its delivery to Naval Air Facility Atsugi, Japan, Oct. 2024.





Photos: Clockwise: NAVFAE EXWC Change of Command, July 2024; FIRST Robotics competition at FATHOMWERX, March 2025; Naval Civil Engineering Laboratory (NCEL) Roster of Employees, Aug. 1991; and as an intern, checking a strain gauge mounting on a five-ton truck used for helicopter transport.



# From Intern to Senior Executive: Reflections on 40 Years of Service

By Kail Macias

Technical Director and Senior Leader, NAVFAE EXWC

**A**s I approach the end of a long and exciting chapter, marking 40 years of service to the nation, I find myself reflecting on the journey that brought me here. How did I, a summer intern, end up forging a four-decade-long career? The answer, as with most things in life, is a mix of intention, opportunity, and a bit of serendipity.

Initially, I chose engineering for reasons that, in hindsight, were somewhat superficial. In the mid-1980s, it boasted high starting and mid-career salaries, all for the cost of a four-year degree. I enjoyed math and science, but what truly sealed the deal was landing a summer internship at the NAVFAE Civil Engineering Laboratory (NCEL) in 1985.

That summer proved to be transformative. One of the projects I supported involved re-certifying the transport of Marine Corps equipment by the CH-53 helicopter. Suddenly, I was working alongside Marines, riggers, technicians, scientists, and engineers. I was immersed in the intricacies of instrumentation, rigging configurations, and the installation of lift kits. I learned so much,

“  
My career advice to those just starting out is simple: learn what your core values are, what truly makes you happy, and then align those things to your work.”

— Kail Macias  
Technical Director and Senior Leader,  
NAVFAE EXWC

so quickly, that I became the "go-to" person for certain tasks. The knowledge I gained from supporting this project allowed me to travel with the team to the Naval Air Warfare Center Aircraft Division (NAWCAD) in Maryland to test and evaluate the systems.

The tests were successful. On the return trip to DC, the team briefed the results to the Marine Corps Program Manager (PM). At the end of the brief, he shared something profound with us – how inherently unsafe the process we were improving had been. He told us that our work would save lives and improve operations.

In that moment, everything clicked. It put everything into perspective. I knew, without a doubt:

1. I had chosen the right career field.
2. I wanted a career that made a difference.
3. I wanted to be a civil servant, working for the Department of the Navy to provide capability to the warfighter.

And that's what I have done for the last 40 years!

The exciting aspects of engineering and serving as a Navy civilian have been many.

I've enjoyed solving complicated problems and providing critical capabilities to the warfighter. I reveled in working with technology and integrating it into existing and new systems. This required constant research, development, testing, evaluation, in-service engineering, and life-cycle support. Coming into the field in the mid-80s was an incredible time. We witnessed the transition from workstations to PCs, the dawn of the internet, and mind-blowing leaps in computing, culminating in the rise of artificial intelligence. Not to mention the groundbreaking advancements in materials, energy, and manufacturing.

My career advice to those just starting out is simple: learn what your core values are, what truly makes you happy, and then align those things to your work. To quote Steve Jobs, "The only way to do great work is to love what you do."

I honestly believe that every job I've held throughout my career has been the best job in the entire Department of the Navy.

This couldn't be truer being the Senior Leader at NAVFAE EXWC – and marveling at the incredible, innovative and outside-the-box expert technical solutions the team provides to the warfighter. I couldn't be prouder being a part of NAVFAE Systems Command's only warfare center.

As I prepare to close this chapter, I am filled with gratitude for the opportunities I've had, the people I've worked alongside, and the impact we've made together. My proudest career accomplishment is knowing that, working alongside the extraordinary, dedicated and talented personnel, we have made a difference. I look forward to seeing what the future holds, knowing that the lessons learned and the relationships forged over these past 40 years will continue to guide me.



With NAVFAE Executive Director Jennifer LaTorre, at NAVFAE EXWC, July 2024.

Right: At FIRST Robotics with the NAVFAE EXWC-sponsored Team 4414, the HighTide robotics team of Ventura County, March 2025.



Below: 2024 Technical Warrant Holders meeting.



## Career Insights

### Don't ignore adversity, challenges, or conflict.

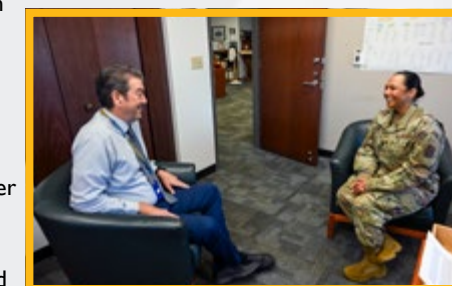
You might miss an opportunity to improve things – the enterprise, the organization, individuals, and even yourself. Do your best to understand the root cause. Stick to the facts and remove the emotion. Identify the sticking points. Can you live with them? Develop a plan and/or strategy to improve the situation. Get buy-in from the relevant stakeholders and then speak with one voice. This formula has proven remarkably successful in overcoming adversity and fostering tremendous growth in mindset, capabilities, relationships, and collaboration. While adversity and challenges can be uncomfortable, I learned throughout my career, that instead of looking at them as something to avoid, it is actually far more beneficial to face the challenges and learn and grow from them.



With NAVFAE EXWC Commanding Officer: Capt Dean Allen during a visit with Peter Reddy, Deputy Assistant Secretary of the Navy (DASN) for Research, Development, Testing, and Engineering (RD&TE), Sept. 2025.

### Build Strong Relationships, and coach and mentor others

Mentoring, coaching, and collaboration have been instrumental throughout my career. Whenever I felt stuck, I was fortunate to have people I could turn to for trusted and solid strategic advice and guidance. Mentoring was particularly helpful for long-term career development, with a time horizon of 5 to 20+ years. Coaching was invaluable when I needed input or recommendations on how to handle a current issue or situation in real-time. I also had the opportunity to pay it forward and become a mentor and a coach myself. I remember someone early in my career telling me that you often learn more by being a mentor or coach than by being a mentee or employee. To my pleasant surprise, that proved true. Even to this day, interacting with those excited for their careers and the future truly energizes me! Next, invest the time to build a strong network and develop genuine relationships; these have been critical for collaboration, especially during crises or high-tempo operations. This creates a solid foundation that is a force multiplier. (continued to next page)



Mentoring session with Division Director, Contracting Team 4 (CON74), Nicole Bell.



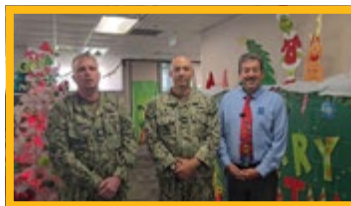
(continued from previous page)

## Work-Life Balance: Finding Time for it All

Life is so much more than just work – make time for the things that are important to you outside of your professional life, like your family and hobbies. In my early to mid-career, I was terrible at it. I was raised by a single mother with five children, in the late 1960s through the early 1980s. She was an incredible role model, and one of her core beliefs was work ethic. I remember her telling us that the recipe for success was believing in yourself, never giving up, and always putting in the hard work. She once corrected me on the quote, "10% of life is what happens to you, and 90% is how you deal with it." She told me, "1% of life is what happens to you, and 120% is how you deal with it." As a young kid, although the math didn't make sense, watching how she worked so hard – typically two jobs – and still found the time to go back to school and get an associate degree was incredibly inspiring. The work ethic instilled in me and my siblings was an incredible asset throughout school and my early to mid-career. But then, I realized that putting in extra time was a losing proposition. I wasn't getting more work done, and I was missing out on opportunities with my family. I had to self-assess what was important, re-balance, and put a plan together. Thankfully, I had some great mentors who provided excellent advice. It sounds simplistic, but executing the plan and holding myself accountable was the key to success.



Welcoming summer interns, 2025.



Sending holiday greetings to NAVFAC EXWC, with Command Master Chief Martin Laurie and Commanding Officer Capt. Dean Allen.



Photos: Clockwise: Mentoring at NAVFAC EXWC; FATHOMWERX Summit 2025; with NAVFAC Pacific Commander, Rear Adm. Omarr Tobias, and the NAVFAC EXWC team, in Hawaii; at the FIRST Robotics competition with Angel Zamarron of Naval Air Warfare Center Weapons Division, and NAVFAC EXWC STEM Coordinator Mark Campbell. Center: Welcoming summer interns, 2025.



Capt. Mark Stefanik, left, mission commander of Pacific Partnership 2025, talks with Chief Construction Electrician Luke Clemens (right) and Construction Electrician 1st Class Jeremiah Parrott during a survey of the Vaiola Hospital emergency backup power generation system.

## NAVFAC EXWC's MUSE Provides Expert Support to Tongan Hospital, Strengthens Resiliency

By Chief Construction Electrician Luke Clemens

Nuku'alofa, Tonga – During Pacific Partnership 2025, U.S. Navy Seabees Chief Construction Electrician Luke Clemens and Construction Electrician 1st Class Jeremy Parrott traveled to Tonga to provide critical technical expertise to Vaiola Hospital, the nation's primary healthcare facility.

Arriving in Nuku'alofa with just a single toolkit and a steadfast determination to assist, these expert technicians with NAVFAC EXWC's Mobile Utilities Support Equipment (MUSE) unit quickly assessed the situation and found solutions to power challenges the hospital was facing.

Without prior knowledge of the specific system configurations or existing problems, the Seabees relied

on their extensive training and problem-solving skills to diagnose the problems.

"Troubleshooting electrical issues certainly can become challenging," Parrott said. "What makes MUSE great is the teamwork between veterans like Chief Clemens and junior technicians on complex or vague issues."

Through meticulous troubleshooting, they identified issues and worked to obtain replacement parts to restore the hospital's emergency power system to full functionality.

The Seabees significantly enhanced Vaiola Hospital's emergency preparedness, a testament to the power of skill, dedication, and a shared commitment to improving lives.

Having reliable and uninterrupted power during emergencies minimizes downtime, ensures critical medical equipment remains operational, and ultimately strengthens the hospital's capacity to provide vital healthcare services to the people of Tonga.

The successful collaboration between the U.S. Navy Seabees and Vaiola Hospital underscores the importance of international cooperation and technical assistance in strengthening infrastructure and building resilient communities.

Pacific Partnership is the Navy's largest annual multinational humanitarian assistance and disaster response mission conducted in the Indo-Pacific. Each year, the mission team works collectively with host and partner nations to enhance regional interoperability and disaster response capabilities, increase security and stability in the region and foster new and enduring friendships in the Indo-Pacific. ♦



Construction Electrician 1st Class Jeremy Parrott performs generator training with the electrical power employees at Vaiola Hospital.





# NAVFAC EXWC Highlights Vital Role of Innovation in Supporting the Warfighter

By Lisa Ferdinando  
NAVFAC EXWC  
Public Affairs Officer



NAVFAC EXWC Commanding Officer Capt. Dean Allen and Technical Director Kail Macias open the FATHOMWERX 2025 Summit, at the Port of Hueneme, Oct. 15, 2025. (U.S. Navy photos by Eric Parsons, NSWC PHD)

**N**AVFAC EXWC Commanding Officer Capt. Dean Allen and Technical Director Kail Macias have highlighted the critical role of innovation, collaboration and experimentation to deliver to the warfighter in today's rapidly changing technological landscape.

Allen and Macias kicked off the two-day FATHOMWERX Summit 2025 with other cohorts, lauding the benefits of partnerships with industry and academia in accelerating technology and innovation.

The hundreds of participants at the event at the FATHOMWERX laboratory space in the Port of Hueneme, Allen said, have a singular focus: to collaborate, innovate and ultimately enable the warfighter.

Naval Facilities Engineering Systems Command's (NAVFAC) only warfare center, NAVFAC EXWC is a small but agile command that comprises technical experts in the Expeditionary, Ocean and Shore technical domains, he explained.

The diverse portfolio and critical work that spans the globe rely on rapid and agile solutions.

"I would argue that for EXWC, at least, innovation is not just optional – it's essential. It ensures our mission success," Allen said, adding, the collaboration, innovation and partnerships through FATHOMWERX have been "absolutely indispensable."

In the keynote address, Macias warned how adversaries and strategic competitors are taking advantage of cutting-edge technologies, making it more urgent than ever for rapid solutions, through both traditional and non-traditional pathways.

"Things such as artificial intelligence, ubiquitous sensors, unmanned autonomous systems and long-range precision weapons are proliferating, making contested spaces more transparent and more lethal and transforming how the navies will fight the future fight," Macias said.

NAVFAC EXWC is using traditional as well as non-traditional means, he said, to achieve rapid results. For example, he noted

contracts for expeditionary engineering reconnaissance have been executed through Other Transaction Authority (OTA) that allows federal agencies to enter Other Transaction (OT) agreements that access research and development (R&D) projects or prototypes from commercial resources, providing more flexible and faster options than traditional government acquisition contracting.

This is important, Macias explained, because it significantly cuts down the time for project execution. He shared how surveying and mapping for construction projects used to take weeks or months, but the work can now be accomplished in days thanks to the technology accessed through the OTs. The acceleration allows decisions to be made and infrastructure projects to quickly begin, critical when time is of the essence in forward deployed or contested environments.

In addition, NAVFAC EXWC utilizes Cooperative Research and Development Agreements, or CRADAs, which are agreements between a federal laboratory and a non-federal party to perform collaborative research and development to support the laboratory's mission; Educational Partnership Agreements (EPAs) with educational institutions to advance the STEM and business pipeline; and Partnership Intermediary Agreements (PIAs) with non-federal entities to promote technology transfer and commercialization.

Macias complimented the FATHOMWERX technology-based hub as the perfect example of a collaborative ecosystem where government, industry, academia, and other stakeholders can come together for testing, experimentation and getting to the solutions the warfighter needs, "bringing the best and brightest together so that we can tackle these problems makes a huge difference."

NAVFAC EXWC is a partner at FATHOMWERX, with Naval Surface Warfare Center Port Hueneme Division, Naval Air Warfare Center Weapons Division, the Port of Hueneme, Matterlabs, and the Economic Development Collaborative. ♦





# NAVFAC EXWC Tests, Evaluates Modular Barge System for Warfighter Needs

By Paolo Linares  
EX521, Research & Development

**N**AVFAC EXWC led a weeklong test of a sectional barge system designed to support diverse waterfront construction operations in support of Fleet and warfighter needs.

The Expeditionary Port Damage Repair (Ex-PDR) Expedient Configurable Barge (ECB) Test Event I, Aug. 25-29 at the Port of Hueneme, included assembling and disassembling the 10-section Poseidon Barge System, conducting operational tests and evaluating the system.

The event validated the barge's ability to load accessory equipment, secure it for transport, and deploy it in a simulated operational environment. This milestone improves Port Damage Repair capability, with the next test event scheduled for March 2026.

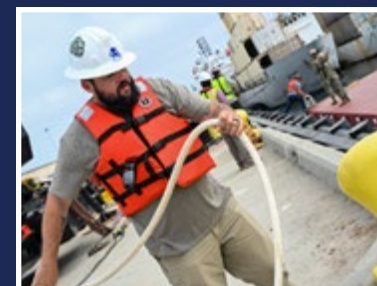
"The successful testing event was the culmination of the hard work of the NAVFAC EXWC engineers and technicians, and the fleet that has supported this from the start," Project Lead Lilian Buabeng said. "Getting this platform tested and in the hands of the warfighter will equip them to conduct mission critical requirements."

The flat-bottom, sectional barge is configurable to various sizes, accommodating equipment for diving, dredging, pile driving, light salvage, and other construction activities to meet Naval Construction Force (NCF) requirements, she said.

The testing included construction and deconstruction of the barge and its subsystems, and live evaluation and discussions regarding system employment, operational risk, engineering design, and procurement requirements, she said.

Dozens of personnel — federal civilians, sailors, and contractors — supported the operation. Participating military units were Naval Construction Group One (NCG-1), Underwater Construction Team Two (UCT-2), and Naval Mobile Construction Battalion Five (NMCB-5).

"We are proud of this demonstration that advances the capabilities of the Fleet and warfighter," Buabeng said. "We are grateful for all who worked on this project to deliver an agile system that can meet national defense and operational needs." ♦



Photos by Lisa Ferdinando and John Mijares





NAVFAC EXWC Commanding Officer Capt. Dean Allen, fifth from right, poses with personnel from NAVFAC EXWC, Coso Operating Company, and XGS Energy, at the Coso geothermal site.



Geothermal Program Office team members install 2-meter temperature probes in the ground near the Naval Air Station Fallon ranges in Nevada, as part of geothermal exploration efforts for the Department of Energy-funded BRIDGE project.

## NAVFAC EXWC'S Geothermal Experts Advance Energy Resilience for DoN, DoW

In the Mojave Desert of southeastern California, Navy geothermal experts are carrying out the complex tasks of tapping into the earth's natural heat, to advance both the understanding and use of geothermal energy to bolster energy resilience for national defense priorities.

The Navy's Geothermal Program Office (GPO), a unique office of Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC), develops and maximizes utilization of geothermal resources to benefit Department of the Navy and the Department of War (DoW) readiness.

Located at Naval Air Weapons Station (NAWS) China Lake, the GPO performs geothermal exploration, monitors the geothermal field at Coso, and provides technical advice to DoW for all aspects involved in the development of geothermal energy.

"This is an extraordinary office," GPO Director Jade Zimmerman said, noting it is the only one of its kind within the Department of War. "We strive to be at the forefront of geothermal investigations to develop geothermal on installations around the globe."

"The office is a remarkable example of specialized expertise within the DoN and how partnerships with private industry, academia, and other federal agencies can provide enormous benefits to the Navy and broader government," NAVFAC EXWC Commanding Officer Capt. Dean Allen said after a site visit.

### Recognized Experts in Geothermal Exploration

Comprised of geoscientists, the GPO provides geothermal subject matter expertise to DoW and global partners, and performs research and development in geothermal exploration, resource development, resource monitoring, and resource sustainability.

In October, the Geothermal Program Office presented its 2-meter temperature survey results as part of geothermal exploration efforts beyond the developed Coso Geothermal Field. This work builds on existing shallow temperature datasets collected by the GPO in 2019-2020.

This event, at the Geothermal Rising Conference in Reno, Nevada, brought together leading geothermal experts from around the world. The conference is an opportunity for the GPO to share its work to an international audience, learn the latest advancements and initiatives in global geothermal technologies, and facilitate collaboration with industry, academia, and other federal agencies. An event like this is invaluable to the GPO's work, often leading other federal agencies to hire the GPO for geothermal resource investigations and expertise, ultimately strengthening federal understanding of geothermal energy.

The DoW continues to lay the groundwork to deploy new geothermal technologies across military installations to support



NAVFAC EXWC Commanding Officer Capt. Dean Allen poses with the NAVFAC EXWC team at the Coso Wash Fault in the East Flank area of Coso.

mission assurance and support increased power generation to meet the growing demand for energy. By diversifying energy sources and reducing dependence on vulnerable supply chains, the DoW is enhancing its ability to maintain critical operations in the face of disruptions or threats.

To support these efforts, the GPO is currently working on the Defense Innovation Unit Geothermal Other Transaction Authority (OTA) supporting Army, Air Force, and Navy for geothermal development at Naval Air Station Fallon, Naval Air Facility El Centro, and Naval Air Station Corpus Christi to assess the feasibility of enhanced geothermal systems (EGS) providing baseload power to these installations, reducing reliance on the commercial grid.

Additionally, the GPO took part in the Department of Energy-funded Basin and Range Investigations for Developing Geothermal Energy (BRIDGE) project. Completed in January 2025, this project produced a playbook of hidden, or blind, geothermal systems in Nevada and developed exploration methodologies for discovering those systems, utilizing advanced geophysical techniques and developing new methodologies to identify promising geothermal reservoirs that were previously overlooked.

The project led to the discovery and characterization of four geothermal plays, two of which are within or adjacent to Naval Air Station Fallon range lands and one at Hawthorne Army Depot.

In a partnership with academia, the GPO is working with the University of Hawaii to deploy geophysical surveys at Lualualei Radio Transmission Facility on Oahu, Hawaii. Magnetotelluric and gravity data will be collected and used to determine the likelihood of whether a geothermal reservoir exists in the area.

### Develops Resources, Oversees Geothermal Contract for Coso

Technical tasks of the GPO include installing thermal probes, drilling test wells, tracking seismicity, performing geophysical surveys, generating geologic models, and understanding geologic and geotechnical data to explore for, develop, and manage geothermal energy resources on DoW lands.

The office develops resources under public-private ventures to construct power generating plants; fulfills a 1979 Memorandum of Agreement with Tribal Partners for preserving the sacred Coso Hot Springs located within the boundaries of NAWS China Lake; and manages all aspects of the Navy's geothermal resource at Coso, including overseeing contract between the Navy and Coso Operating Company, LLC.

The Coso Operating Company operates the geothermal site under contract with the Navy and sells the generated electricity to the public energy grid. Currently averaging around 105-110 MW, the plant has a 270 MW installed capacity, allowing plenty of room for growth.

The Navy receives a portion of the revenue from the power sales, a total of nearly \$600 million since the plant came online in 1987. The Navy uses the revenue for projects at NAWS China Lake and other Navy installations to further advance energy independence.

"It is pretty incredible, the breadth and depth of the work we do here," Zimmerman said, highlighting how all the efforts tie back to strengthening geothermal technologies and interests to advance Department of Navy and Department of War energy resilience and readiness. ♦



NAVFAC EXWC Commanding Officer Capt. Dean Allen is briefed on geologic conditions that make geothermal fields possible, at a portion of the Coso Wash Fault in the East Flank area of Coso.



Geothermal Program Office Director Jade Zimmerman discusses Coso Hot Springs monitoring responsibilities and methods with NAVFAC EXWC Commanding Officer Capt. Dean Allen, at one of the sample locations in the East Flank area of Coso.



Geothermal Program Office geophysicist Stephanie Nale and Geothermal Program Office Director Jade Zimmerman discuss the issues of scaling in pipelines and wells with Wally Ludwig, Deputy and Chief of Staff to the Deputy Assistant Secretary of Navy (Energy), in the East Flank area of Coso.





Commanding Officer Capt. Dean Allen and Deputy Technical Director Brant Pickrell host Marjorie Lutz, Director of Operations, Navy Installations Command (CNIC), for talks on NAVFAC EXWC's advanced technical expertise and unique solutions that enhance and advance lethality and readiness of the Fleet and warfighter.

## NAVFAC EXWC Hosts Top CNIC Official, Highlights Unique, Innovative Work to Support Warfighter

**N**AVFAC EXWC recently hosted Marjorie Lutz, Director of Operations, Navy Installations Command (CNIC), to showcase the warfare center's unique technical authorities and advanced capabilities, and underscore the critical role NAVFAC EXWC plays in providing technical expertise to CNIC and the broader Navy enterprise.

Commanding Officer Capt. Dean Allen and senior leadership delivered a strategic overview of NAVFAC EXWC's contributions to enhancing warfighter and Fleet readiness, followed by briefings on the technical departments and a tour of lab spaces.

Ms. Lutz visited the Ocean Technical Department's Deep Ocean Simulation Facility, which is capable of testing equipment under the pressures and temperatures encountered at ocean depths.

She viewed spaces dedicated to explosive effects and the DoD Lock Program. At the Chemistry Lab, talks focused on efforts to remove per- and poly-fluoroalkyl substances (PFAS) from waters impacted by aqueous film forming foam (AFFF). The visit concluded at the Mobile Utilities Support Equipment (MUSE) facility, showcasing the MUSE equipment and the Seabee expert power technicians who rapidly deploy it worldwide in support of Department of War power requirements.

The daylong engagement served to enhance understanding of NAVFAC EXWC's critical role in supporting Fleet requirements and national security objectives, and advance the warfare center's role in supporting these critical priorities. ♦



Commanding Officer Capt. Dean Allen shares the work of NAVFAC EXWC in advancing national security priorities and enabling the warfighter.



Discussions at the Mobile Utilities Support Equipment (MUSE) facility focused on MUSE capabilities and the rapid deployment of equipment and technical experts to support Department of War power requirements worldwide.



Dr. Itzel Godinez, with the Shore Department's Environmental Resources and Assessment Division, describes work in the Chemistry Lab focused on efforts to remove per- and poly-fluoroalkyl substances (PFAS) from waters impacted by aqueous film forming foam (AFFF).



Shore Technical Department Head Kim Jacobsen talks with Ms. Lutz at the Mobile Utilities Support Equipment (MUSE) facility.



Division Director of Physical Security Technology Roy Jusino discusses DoW Lock Program technology and innovations aimed at safeguarding national security information, and arms, ammunitions, and explosives.



Division Director of Physical Security Technology Roy Jusino shares how the DoW Lock Program and NAVFAC EXWC's Explosions Effects and Consequences department collaborate on testing of technologies for hardened doors for blast and physical security.



Oceans Technical Department Business Manager Paul Oemisch describes the Deep Ocean Simulation Facility, which has two chambers that enable in-water functional tests of undersea equipment at ocean pressures ranging from just below surface to a maximum depth of 34,000 feet.







Army Spc. Owen Berry, a member of the 86 Dive team, serves as a tender and holds the life-support umbilical of a diver during inspections.



NAVFAC EXWC Ocean engineer Paulstephen Chierico (center) and divers from the Army's 86th Engineer Dive Detachment pose for a group photo after a successful mission inspecting eight mooring systems in the Columbia and Snake River system.

## NAVFAC EXWC Supports Crucial Underwater Inspection and Sustainment of Aids To Navigation and Stern Moorings in the Columbia River

By Paulstephen Chierico, P.E.  
NAVFAC EXWC Ocean Engineer, Diver

**C**OLUMBIA RIVER— Border between Oregon and Washington States – Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC) Ocean Engineer and Diver Paulstephen Chierico led divers from the Army's 86th Engineer Dive Detachment in completing underwater inspection and sustainment of eight mooring systems designed to improve safety and navigation in the important Columbia and Snake River system.

This was a complex mission that involved 15 divers and 16 dives, with the inspection process exacting and results providing a thorough impression of the underwater mooring condition, according to Chierico, who served as the mission's engineer-in-charge.

"I was proud to work with the 86 Dive in this project from the U.S. Army Corps of Engineers to keep our waterways safe and the commerce flowing," he said. "Ensuring the material condition of the moorings is of massive significance in this busy hub."

In this federal waterway, commercial ships use their bow

anchors and moor stern-to these eight mooring systems to safely anchor outside of the navigational channel. With hydroelectric dams, bustling international commerce, and support to the livelihoods of the countless people who depend on it, this river system is of vital importance to local community, the nation, and the world, Chierico explained.

Ocean engineers in NAVFAC EXWC's Fleet Systems Division (OC60) designed and oversaw the installation years ago of the mooring systems, with each buoy providing radar reflection, navigational lights, and stern mooring capability to support vessels up to 1,000-foot-long Panamax ships.

Named after the combination of the words Panama and maximum, Panamax-style ships have a beam that is the maximum allowable width for ships to transit through the Panama Canal; these bulk carriers transport much of the grain shipments from the Columbia and Snake Rivers.

OC60 and 86 Dive from Fort Eustis, Virginia, were assigned the inspection mission from U.S. Army Corps of Engineers (USACE) District Portland based on a number of factors, including river currents, visibility, and temperature.

Project leaders from 86 Dive arranged for the moorings to be unoccupied by ships in two groupings. There are four northern moorings between Rainier, Oregon, and Kalama, Washington, and four southern moorings between Vancouver, Washington, and Portland, Oregon. USACE District Portland manages the moorings.

The 86 Dive team mobilized their 26-foot boat, diving gear, and dive team for the inspections and sustainment on the northern moorings in the first week in June, and the southern moorings the next week.

Due to the snowmelt from the Canadian Rockies, the Cascades, and the Blue Mountains, the Columbia River in these areas are wonderfully fresh and clean, Chierico shared. The closest moorings to the Pacific Ocean are the northern moorings 67 miles upstream, and the other seven moorings span 38 more miles upstream. Salmon, steelhead, sturgeon, and many other species of fish thrive in these waters.

"We had a need for dive inspections of these stern mooring buoys, NAVFAC EXWC and the 86 Dive team stepped up and delivered!" Navigation Project Manager Jessica Stokke with USACE District Portland said.

"The exceptional work by these professionals has reassured the navigation stakeholder community that the buoys can continue to serve the Columbia-Snake River system, which is the third largest grain export gateway in the world," Stokke continued.

86 Dive Executive Officer 1st Lt. Jack Venker commended the team for their precision and

“  
We had a  
need for dive  
inspections  
of these stern  
mooring buoys,  
NAVFAC  
EXWC and the  
86 Dive team  
stepped up and  
delivered!”

— Jessica Stokke  
Navigation Project Manager  
with USACE District Portland



A stern mooring in the Columbia River.

expertise in completing the complex mission.

"Our divers are always eager to train in challenging environments. The opportunity to work with USACE Portland District exercises our ability to conduct mooring system inspections while managing high current, low temperatures, and minimal visibility. Overcoming these real-world challenges is an essential part of our mission to develop strong, capable divers ready to support the Engineer Regiment," Venker said.

Ocean engineers in NAVFAC EXWC's Fleet Systems Division (OC60) are charged with the full acquisition lifecycle of mooring systems for the entire Department of War. They inspect and sustain mooring systems every three years, according to Unified Facilities Criteria (UFC) requirements. The overwhelming majority of mooring systems support Commander Navy Installations Command (CNIC) Port Operations, Defense Logistics Agency (DLA) Fueling Operations, and Navy Inactive Ships Maintenance Office (NISMO) purposes.

OC60 has additional customers outside of those centrally managed by the moorings program – these eight Private Aids To Navigation (PATON) and stern mooring systems are examples of these "other" DoW moorings.

"This was a highly successful mission accomplished through extraordinary teamwork," Chierico said. "The talented and skilled mooring engineers at NAVFAC EXWC OC60 stand ready to support USACE with any technical guidance and assistance they may need in the future." ♦



Above: Sgt. Xavier Vazquez from the Army's 86th Engineer Dive Detachment poses with NAVFAC EXWC Ocean engineer Paulstephen Chierico during inspections.

Left: NAVFAC EXWC Ocean engineer Paulstephen Chierico (fifth from left) poses with divers from the Army's 86th Engineer Dive Detachment and members of the U.S. Army Corps of Engineers Portland District after a successful mission inspecting eight mooring systems in the Columbia and Snake River system.





The World War II Fighting Seabee descends onto the eight-foot-high pedestal as Naval Mobile Construction Battalion personnel position and secure the base plate with anchor bolts.

## Honoring the Legacy: NAVFAC EXWC Restores World War II Fighting Seabee Statue

Story and Photos by Patrick Shelby  
Center for Seabees and Facilities Engineering

**A** restored World War II-era Fighting Seabee statue, an unwavering symbol of pride and commitment forged by Seabee resourcefulness, has landed home at the Naval Civil Engineer Corps Officers School (CECOS) at Naval Base Ventura County.

As the 80th anniversary of CECOS approached, current and past CECOS commanding officers sought ways to showcase the Civil Engineering Corps (CEC) and its heritage. Soon, word emerged of an antique Fighting Seabee that was once displayed in front of the previous Seabee Museum on base.

The figure had been stashed away for years by retired Construction Builder Chief and former Construction Equipment Division Director Joseph Paris at Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC).

The exact origins of the statue are unknown.

“The bee has a determined look on its face to demonstrate the Seabee motto, ‘the difficult we do at once, the impossible takes a bit longer,’” Capt. Jeffrey C. Deviney, CEC, Commander, Center for Seabees Facilities and Engineering, said.



Michael Holguin, Work Leader at the Expeditionary Maintenance Center, applies resin to fiberglass sheets covering newly fabricated metal parts riveted to the body and 10-foot wings of the Fighting Seabee statue.



Michael Holguin and Andres Hernandez with the Expeditionary Maintenance Center spray the first of two layers of high-gloss black paint on the Seabee's body.

### Restoring the Fighting Bee

While juggling multiple other projects in his busy department, Michael Holguin, NAVFAC EXWC Expeditionary Maintenance Center (EMC) Work Leader, led the restoration effort.

“I’m just happy for its new home and I had the opportunity to bring it back to life,” Holguin said.

He said restoring the unique artifact served as a tribute for Paris, his former director who passed away in 2021. It was Paris’ dream to see the statue come back to life, building upon the memorable story of the Seabees for all to admire, Holguin said.

“He was all about the bees, everything for the bees, he loved the bees,” Holguin reminisced. “He was also about us, the civilians. You ask anyone here, he took care of everyone.”

The detailed project focused on maintaining the original character and exposure of all the classic elements of construction to highlight its past, culminating with its placement in front of CECOS for the Basic Class 278 Graduation in May.

The statue holds traditional tools of the Seabees, demonstrating versatility and adaptability, as well as a submachine gun to symbolize the dual combat role.

Holguin said he was honored to contribute to the restoration of this extraordinary piece of history, which young sailors had created by hand decades ago using repurposed materials while stationed in the Philippines.

“We were a team of six – and I am grateful for the talented artistry of all who contributed and shared their expert craftsmanship, skill, and technical expertise to bring the Fighting Bee back to its fighting glory!” Holguin said.

Holguin, who has worked at the EMC for 17 years, fabricated replacement parts, applied layers of fiberglass, and installed new rivets. He glued seams, sealed the structure, and prepped the surface for multiple layers of primer and paint, with meticulous care and attention to detail.

Other teammates performed metal repairs, supported painting projects, recreated and repaired parts of the bee, and built a new base for the statue.

The project demanded expert skill and craftsmanship to carefully preserve the Seabee’s historic character and colorful charm.

As he restored the Fighting Seabee, Holguin said he felt a special connection to the figure, with the vocational experience unlike any other work he had performed before.

“It’s a part of you. It takes a little from you. It’s kind of weird because you put your soul into it. You put your effort into it,” he said.

Casting an impressive profile symbolizing relentless achievement, the statue serves as a teaching aid and enhancement to the school’s training environment.

### “We Build, We Fight”

The supersize Seabee is roughly the size of a small van and weighs about 2,400 pounds. The colorful rings of yellow and orange electrify the bee’s glossy black body, which is proudly adorned by hundreds of flathead screws and rivets used during the 1940s and 1950s.

It wears a Navy sailor dixie cap and carries various tools of the trade, along with a submachine gun for defense. The 10-foot wings are white with a forward-facing, seafaring blue outline that matches its six arms. On its sleeves are Seabee ranks and rates, and the gold crossed oak leaves of the CEC.

The statue symbolizes the Seabee motto “Construimus, Batuimus,” Latin for “We Build, We Fight,” coined in 1942 by Adm. Ben Moreell, the father of the Seabees.

The bee, now at the entrance of Moreell Hall at CECOS, greets present Seabees and bids Fair Winds and Following Seas to the expert builders as they depart to far-flung places around the globe, working on construction projects while maintaining the Fighting Bee spirit to quickly defend and protect.

The Seabees’ ability to build and defend was a core part of their identity to support the war effort in the Pacific by constructing bases, runways, and other critical infrastructure in World War II, while also being capable of defending these facilities. This dual role has continued throughout their history, with Seabees deploying to various conflicts and humanitarian efforts worldwide.

The restored statue brings it all full circle, a timeless symbol of the legacy of the U.S. Navy Seabees.

“This is something that’s one of a kind. This is something no one else will ever have,” Holguin said. “It’s an honor. It’s history. It’s the bee history. It represents a lot of things. It’s pride.” ♦



Michael Holguin, Work Leader at the Expeditionary Maintenance Center, sands around the Fighting Seabee’s mouth to remove layers of cracked paint and filler while restoring the statue’s character.





NAVFAC EXWC Commanding Officer Capt. Dean Allen and Technical Director Kail Macias host Deputy Assistant Secretary of the Navy (RDT&E) Peter Reddy for discussions on NAVFAC EXWC's critical role of technological innovation and strategic readiness.

## NAVFAC EXWC Hosts Key Navy Leader to Discuss Future Readiness and Technological Advancement

### Deputy Assistant Secretary of the Navy (RDT&E) Peter Reddy Praises EXWC's Unique Capabilities and Emphasizes the Importance of a Resilient, Adaptable Naval Research and Development Establishment

In a visit that underscored the critical role of technological innovation and strategic readiness, Peter Reddy, Deputy Assistant Secretary of the Navy (DASN) for Research, Development, Testing, and Engineering (RDT&E), recently toured the NAVFAC Engineering and Expeditionary Warfare Center (NAVFAC EXWC).

The engagement provided an opportunity for Mr. Reddy to see firsthand the diverse capabilities of NAVFAC EXWC and discuss the Naval Research and Development Establishment's (NR&DE) preparations for future challenges.

During an interview with Kail Macias, NAVFAC EXWC Technical Director, Mr. Reddy shared his insights on the NR&DE, drawing from his experience both within the establishment and in his current leadership position at the Pentagon.

His decade of experience working at the Naval Information Warfare Center Atlantic, he said, gave him significant appreciation for the NR&DE's widespread capabilities. He added that now, working from the Pentagon as the DASN and being responsible for the NR&DE's sponsorship and awareness, he has the opportunity to see even more of the organization's reach and power.

He noted that, in spending time with different warfare centers, such as EXWC, he gains a better understanding of the NR&DE's capabilities and a deeper appreciation for the "real power, national impact, capability of the Naval Research and Development Establishment."

Photos by Cmdr. Kevin Painter



NAVFAC EXWC Commanding Officer Capt. Dean Allen talks with Deputy Assistant Secretary of the Navy (RDT&E) Peter Reddy at the NAVFAC EXWC Expeditionary Maintenance Center (EMC) in Port Hueneme, where heavy equipment mechanic experts conduct intermediate and depot-level maintenance on Civil Engineering Support Equipment, Naval Support Element assets, other tactical and ground vehicles, trailers, cranes, and Lighter Amphibious Resupply - Cargo (LARC) systems for customers worldwide.

### The 2027 Imperative: Readiness and Resilience

A key focus of the discussion centered on the importance of preparing for potential challenges by the year 2027. Mr. Reddy emphasized that this date, driven by potential adversaries, has served as a crucial rallying point for the Navy and the NR&DE.

Mr. Reddy stated that the year 2027 has been a point of focus for the Navy, given concerns about potential adversaries. He explained that this has helped align military services, and the Navy and NR&DE have rallied to improve preparedness, adjust mindsets, improve processes, and become more resilient and able to respond if the nation needs to go to war. He emphasized that "we've all been talking about one January 2027 as an important pacing date in the future."

He outlined two critical areas of focus:

#### Rapid Technological Adaption:

Mr. Reddy emphasized the scientists and engineers across the NR&DE, including EXWC, will need to rapidly adapt to changes on the battlefield. This means getting feedback from the fleet and making quick adjustments based on what the adversary is doing, or if equipment is not functioning as expected. The goal is that EXWC will be "getting feedback from the field and from the fleet, and making those very quick adjustments when the enemy comes up with something or something isn't working the way we anticipated."

#### Workforce Readiness and Resilience:

Mr. Reddy explained that it is important to focus on the individual wartime readiness of each warfare center and lab. He stated that this includes making sure the workforce has the correct documents, and that they have the mental resilience to work long hours and deal with any challenges that occur during times of combat. He stated that "the other aspect of it is just the individual wartime readiness of the individual warfare center or lab, our workforce, our capabilities."

Mr. Reddy added that progress has been made toward getting more prepared, but that there is still work to be done. He stated that this includes making sure that the workforce understands what sailors and marines may face, and that the workforce is ready to support them as they deploy.

(continued to next page)



NAVFAC EXWC Technical Director Kail Macias (top photo) and Ocean Engineer Technician Elisia (Lisa) Correa (above) brief Deputy Assistant Secretary of the Navy (RDT&E) Peter Reddy at the Deep Ocean Simulation Facility, which has two chambers that enable in-water functional tests of undersea equipment at ocean pressures ranging from just below surface to a maximum depth of 34,000 feet.



NAVFAC EXWC Chief Technology Officer Cody Reese leads Deputy Assistant Secretary of the Navy (RDT&E) Peter Reddy during a tour of NAVFAC EXWC lab spaces and facilities, showcasing the work of the warfare center in advancing, equipping and supporting the Fleet and warfighter.



During a tour of the Mobile Utilities Support Equipment (MUSE) facilities, Chief Construction Electrician Luke Clemens discusses MUSE capabilities and the rapid deployment of technical experts and equipment to support DoW power requirements worldwide.





Division Director of Physical Security Technology Roy Jusino discusses how the DoW Lock Program and NAVFAC EXWC's Explosions Effects and Consequences department collaborate on testing of technologies for hardened doors for blast and physical security.



Griffin Ross, an engineer in the Oceans Technical Department - Advanced Ocean Technology Division, briefs on technologies to include (foreground, in photo) a seafloor foundation device that was fabricated by a waterjet cutter; and (right, in photo) a waterjet cutter - two technologies purchased in FY2025 with Naval Innovative Science and Engineering (NISE) funds to enhance Oceans' capabilities in providing engineering and technical solutions to the Fleet and warfighter.

(continued from previous page)

### NAVFAC EXWC: A Hub of Critical Capabilities

Mr. Reddy expressed significant admiration for the diverse portfolio of NAVFAC EXWC, highlighting its unique and vital contributions to the NR&DE. He stated that even though NAVFAC EXWC is smaller, the organization's diverse portfolio has capabilities that are vital in times of both peace and war.

He added that if you're looking for an expert on a subject, you can probably find them at EXWC, saying "'Do we have an expert for that?' 'Yeah, we do. That person's at EXWC.'"

He praised EXWC's expertise in ocean engineering, engineering support, and expeditionary support. He emphasized that while naval forces are known for aircraft, missiles, and submarines, these high-end capabilities rely on other support. He explained that the logistics, engineering, and ocean research enable the naval forces to do their jobs. He likened NAVFAC EXWC's work to the "secret sauce" that keeps everything running.

### Looking to the Future

The visit concluded with a renewed sense of commitment to the NR&DE's mission. Mr. Reddy expressed his optimism for the future, particularly after meeting with NAVFAC EXWC's younger professionals. He noted that he had the chance to meet and speak with NAVFAC EXWC's newer staff, and that the future is in good hands with such a bright and enterprising group of engineers, contract specialists, and finance personnel.

The exchange underscored the critical importance of continued investment in naval research and development, as well as the dedication and expertise of the professionals within the NR&DE who are working tirelessly to ensure the Navy's readiness for the challenges of tomorrow. ♦



Deputy Assistant Secretary of the Navy (RDT&E) Peter Reddy sits down for an interview with NAVFAC EXWC Technical Director Kail Macias at the NAVFAC EXWC Expeditionary Maintenance Center (EMC) in Port Hueneme, to describe the critical importance of the Naval Research and Development Establishment in national security.

Watch the Interview here:  
<https://www.dvidshub.net/unit/NFEEWC>



Top: Construction Mechanic 2nd Class Matthew Mango verifies settings on a substation. (File photo)

Bottom: Construction Mechanics 1st Class Jesse Good and Angel Arreola clean an Electro-Motive Diesel (EMD) engine compartment room. (File photo)



# NAVFAC EXWC Seabees Deploy to Naval Station Rota to Provide Critical Power Support



By Construction Mechanic 1st Class  
 Angel M. Arreola

**NAVAL STATION ROTA, SPAIN –** Four Mobile Utilities Support Equipment (MUSE) technicians from Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC), based in Port Hueneme, California, deployed to Naval Station (NAVSTA) Rota, Spain, to provide essential electrical support during peak summer energy demands.

With the onset of high summer temperatures, electricity usage at NAVSTA Rota increases significantly. While the base receives up to 15 megawatts of power from a local utility provider, this supply can be insufficient during periods of high demand. When the base approaches or exceeds its electrical capacity, MUSE technicians step in to ensure continuity of operations.

MUSE systems provide up to five megawatts of prime power generation capability, supporting both surge demand and emergency backup power. This critical support helps maintain operations for high-value assets. Additionally, MUSE supports pier-side operations for various U.S. and Spanish naval vessels and other mission-critical infrastructure at the installation.

As part of their mission, the deployed MUSE team conducted annual inspections and preventive maintenance on two 2,500kW Electro-Motive Diesel (EMD) generators and a 5,000kVA substation. This involved detailed mechanical and electrical inspections, including precision testing of internal combustion systems, transformers, and circuit breakers. Ensuring that these components meet strict operational specifications is vital to avoiding catastrophic failures that could significantly impact base readiness and operations.

MUSE provides temporary energy solutions and technical assistance across the Department of War. The talented technicians are selected from the Navy's Seabee community and attend the U.S. Army Prime Power School at Fort Leonard Wood, Missouri. This intensive yearlong program prepares technicians in advanced power generation, distribution, and transformation to support critical military operations worldwide.

Through their expertise and readiness, MUSE technicians provide NAVSTA Rota and other forward operating bases with reliable, responsive power support and ensuring mission success under any conditions. ♦





NAVFAC Mid-Atlantic Environmental Oil Recovery Supervisor Willie Dockery explains the practical oil-recovery capabilities of the Remote-Control Skimmer to Rear Adm. Jorge Cuadros, Commander, NAVFAC Atlantic.

## NAVFAC MIDLANT Tests Smart Skimmer Developed by NAVFAC EXWC to Enhance Navy's Oil Spill Response

Story and Photos by David Todd  
Naval Facilities Engineering Systems Command Mid-Atlantic Public Affairs

NORFOLK, VA — Responding to environmental challenges and the need for rapid, efficient oil spill recovery, Naval Facilities Engineering Systems Command Mid-Atlantic (NAVFAC MIDLANT) took part in the testing of cutting-edge equipment developed by Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC) to help bolster cleanup efforts at naval installations.

The Remote-Control Skimmer is a compact vessel that combines advanced engineering, agile mobility, and a strong commitment to environmental protection.

Engineered for agility, cost-effectiveness, and precision, the technology reinforces the Navy's commitment to protecting coastal waters while maintaining operational readiness.

Designed to modernize oil recovery operations, it brings innovative technology to the forefront of spill response. During a visit to Naval Station Norfolk, Rear Adm. Jorge Cuadros, Commander of NAVFAC Atlantic, joined NAVFAC MIDLANT

leadership for an in-depth, 360-degree demonstration of the skimmer's remote-control capabilities and its current and future operational potential.

"Enabling Fleet and warfighter readiness means that we must train and operate our platforms as good stewards of our coastal waters," Cuadros said. "Tools like this reflect the Navy's commitment to innovation and investment in solutions that preserve readiness, while safeguarding the environment. I'm excited to see how we can scale this capability across the NAVFAC enterprise."

The skimmer supports the Navy's broader strategy to modernize oil spill recovery across diverse and demanding environments. The collaboration highlights a fusion of technical ingenuity and ecological responsibility aimed at preserving marine ecosystems and operational continuity.

This project is funded by the Navy Environmental Sustainability Development to Integration (NESDI) program — the Navy's environmental shoreside Research, Development, Test, and

Evaluation (RDT&E) program. The collaboration underscores the Navy's commitment to sustainability and defense innovation, fusing technical ingenuity with ecological responsibility to protect marine habitats and support mission readiness.

"The equipment currently used to meet installations' oil recovery needs is expensive to buy and maintain," NAVFAC EXWC Oil Spill Response Program Manager Casey Barker explained. "If we have more cost-effective equipment, like the Remote-Control Skimmer, we could then invest more heavily in equipment like vacuum trucks and trailers to store and transport recovered oil for recycling or disposal."

Oil spills pose serious threats to both the environment and naval operations, disrupting port activity, damaging infrastructure, and impairing readiness. Contamination near ship berths, piers, and waterfront facilities can delay ship movements, interrupt fueling operations, and require costly remediation. Alongside risks to marine life and personnel safety, oil spills also draw critical resources away from operational priorities. An effective and timely response is essential to keeping installations secure, functional, and environmentally compliant, enabling the Fleet to carry out its mission without interruption.

NAVFAC EXWC developed the Remote-Control Skimmer in partnership with oil spill contractor Elastec. The technology marks a strategic advancement in oil spill response and cleanup. Capable of operating up to 650 feet offshore, it accesses spill zones unreachable by fixed recovery systems, and can maneuver beneath piers, around moored vessels, and into tight or obstructed spaces. Weighing roughly 265 pounds when empty and nearly 360 pounds when full (holding approximately 11 gallons of oil), the vessel uses rotating drums to recover oil, storing it in onboard tanks before autonomously returning to shore. This streamlined process enhances efficiency while reducing the environmental impact.

Unlike traditional mechanical recovery methods, which often produce oil-water mixtures containing more than 50 percent water and require repeated transfers to shore for regulatory processing, the Remote-Control Skimmer extracts oil directly from the water's surface with minimal water intake (less than 1 percent). This streamlined approach

significantly enhances recovery efficiency, particularly in remote or high-volume spill zones. While alternative techniques, such as on-site separation are available, they remain costly, technically constrained, and are subject to strict discharge regulations.

"The vessel is much more than metal and software ... it's a promise to our waterways and the Navy's goal to be good stewards of the environment," NAVFAC MIDLANT Environmental Resources and Assessment Product Line Leader Blake Waller said. "This innovation allows the Navy to respond quicker when it's needed most, shortening recovery times so warfighters can return to the mission."

Currently optimized for isolated oil spill recovery, the Remote-Control Skimmer could eventually evolve to support larger spill volumes or integrate advanced sensor technologies, enhancing its ability to support operations in Fleet-concentrated areas.

"Right now, we're testing the skimmer locally in Hampton Roads to assess its potential for our broader mission across all shore installations," Waller said. "We're encouraged by what we've seen so far, and as we continue evaluating its performance, we're excited about where it could lead. The possibilities are truly limitless."

The Remote-Control Skimmer exemplifies a growing alignment between national defense and ecological responsibility. It is powered by innovation, strengthened by collaboration, and anchored by a steadfast commitment to safeguarding marine ecosystems while sustaining operational strength. ♦



During a training exercise, NAVFAC Mid-Atlantic Environmental Oil Recovery team members practice maneuvering the Remote-Control Skimmer under a pier at Naval Station Norfolk to demonstrate the vessel's adaptability to various conditions.



## Fair Winds and Following Seas

## Honoring Extraordinary Service to our Nation!



Capt. Paul Chan

NAVFAC EXWC Commanding Officer Capt. Dean Allen presents the Legion of Merit Award to Capt. Paul Chan for exceptionally meritorious conduct in the performance of outstanding services while serving as Executive Officer from June 2022 through August 2025.

We honor your 30 years of service to the nation and your extraordinary leadership and steadfast devotion to the NAVFAC EXWC mission in providing innovative, agile solutions for the Fleet and warfighter.

Command Master Chief Martin Laurie receives the End of Tour Meritorious Service Medal. We honor your remarkable leadership during your service here at NAVFAC EXWC as the Command Master Chief!

Thank you for your 32 years of dedicated service to the United States Navy and serving as an exemplary leader who guided, mentored, and developed sailors in maintaining our mission-ready focus in supporting the Fleet and warfighter.



Command Master Chief Martin Laurie

“

As I retire from active duty after 34 years (and 5 months) of service, I reflect with deep pride and gratitude on a journey that began as a Seaman Recruit and culminated in the honor of serving as a Navy Commander. This path has been one of growth, challenge, purpose, and privilege – a testament to the opportunities afforded by the United States Navy and the people who shaped my career along the way. As I close this chapter, I do so with a full heart, immense gratitude, and enduring pride in a life of service to our nation.

— Cmdr. Gil Penserga  
Deputy Director of Logistics  
Expeditionary Technical Department



Cmdr. Gil Penserga, who served as the Deputy Director of Logistics at the Expeditionary Technical Department, retires after more than three decades of dedicated service to the Navy.

Cmdr. Gil Penserga



Senior Chief Construction Mechanic John Boyd

**BZ! Senior Chief Construction Mechanic (Seabee Combat Warfare) John Boyd receives the Navy and Marine Corps Commendation Medal for exceptional contributions while serving as Leading Chief Petty Officer on the NAVFAC EXWC Mobile Utilities Support Equipment (MUSE) team.**



*Congratulations*

**Congratulations NAVFAC EXWC  
Assistant Operations Officer  
Lt. Cmdr. Emily Wolff**

for your promotion! We celebrate this milestone and salute your excellence and unwavering commitment to the NAVFAC EXWC mission of providing unique, agile solutions to the Fleet and warfighter!



*Congratulations*

**Congratulations to NAVFAC EXWC's  
newly pinned Chief Petty Officer,  
BUC Bailey Mehus!**



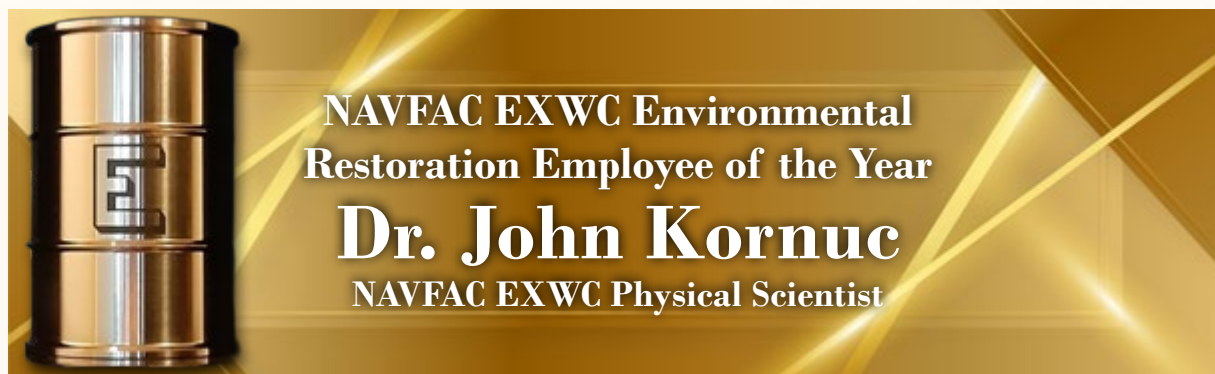
Becoming a chief is a significant milestone and a symbol of immense pride in the world-class fighting Navy.

Wearing the anchor comes with great responsibility, forged from years of hard work, dedication and exceptional accomplishment. Chiefs are proven leaders, trusted mentors and advisers, and experts in their rate and in Navy operations. They are the backbone of the service, with an unwavering commitment to mission readiness, enhancing and strengthening the force, and forging battle-ready sailors.

We proudly celebrate Chief Mehus and all our chiefs who live out the Navy core values of honor, courage and commitment each and every day.

*Bravo Zulu! Welcome to the Mess!*





Dr. John Kornuc, physical scientist with Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC), receives the NAVFAC EXWC Environmental Restoration Employee of the Year award, at NAVFAC EXWC Headquarters aboard Naval Base Ventura County, July 2, 2025. Commanding Officer Capt. Dean Allen and Technical Director Kail Macias presented Dr. Kornuc with the “Drum E” Award honoring his extraordinary support to the Department of the Navy’s Environmental Restoration Program in Fiscal Year 2024. The award cites his work on the Department of the Navy’s Environmental Restoration Program on many projects in Fiscal Year 2024, including research projects on per- and polyfluoroalkyl substances (PFAS), PFAS treatment implementation support at Marine Corps Air Station (MCAS) Iwakuni in Japan, and petroleum cleanup strategies at the Red Hill Bulk Fuel Storage Facility in Hawaii. The Drum E award is named after the miniature oil drum-shaped trophy, with the “E” standing for “environmental.” This distinguished honor recognizes the work of Dr. Kornuc and his outstanding performance and innovative solutions in tackling complex environmental challenges in support of warfighter readiness.

# Congratulations DAVE RICH

NAVFAC EXWC Safety Director

Navy-wide Chief of Naval Operations  
FY24 Safety Ashore Award for Individuals Honoree



“

Receiving the CNO Individual Safety Award is an immense honor, and while I am deeply humbled by this recognition, I truly believe this award reflects the collective commitment to safety that defines NAVFAC EXWC. This award recognizes our shared effort in preventing mishaps, promoting hazard awareness, solid communication, and fostering an environment where safety is essential. I fully believe that maintaining a solid culture of safety at NAVFAC EXWC is paramount to ensuring the well-being of our personnel and ensuring sustained operational readiness. Every member of NAVFAC EXWC contributes to a culture where identifying and addressing risks is encouraged without fear of reprisal, ensuring safety is more than just a policy – it's a deeply ingrained value aligned with NAVFAC and our Commanding Officer's core principles.

— Dave Rich  
NAVFAC EXWC Safety Director



# congratulations



Civilian of the Quarter, 1st Qtr  
Mark Campbell, TD11



Supervisor of the Quarter, 1st Qtr  
Paul Oemisch, OC3



Length of Service Award  
Gustavo Macias, EX23, 40yrs



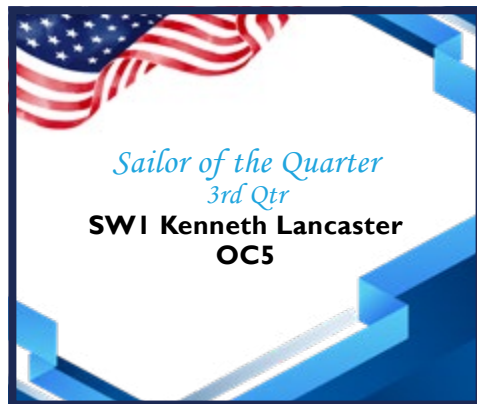
NAVFAC EXWC Coin Presentation  
Congratulations to **Zachary Taylor, BD53**, who received a command coin for supporting critical measures to ensure the safety at NAVFAC EXWC and resulting in a superior passing grade during a recent inspection! He was lauded by the inspectors for his outstanding acumen and expertise.



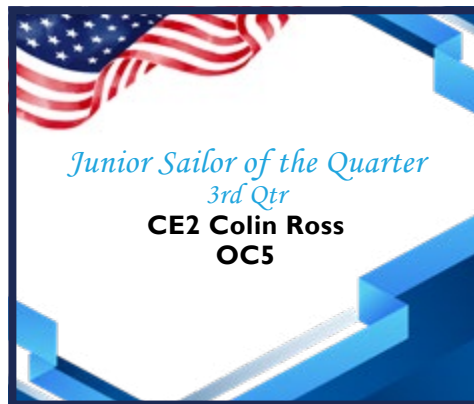
Civilian of the Quarter, 3rd Qtr  
John Kornuc, SH32



Supervisor of the Quarter, 3rd Qtr  
Esteban Guerrero, EX9



Sailor of the Quarter  
3rd Qtr  
SWI Kenneth Lancaster  
OC5



Junior Sailor of the Quarter  
3rd Qtr  
CE2 Colin Ross  
OC5



Leadership Development  
Program Graduate  
Level I  
Kevin Miller  
OC40



New Professionals Graduates  
Khoi Nguyen, SH41; Grace Petersen, SH322; Eli Moore, SH312; Michael Gassen, OC80; Cristobal Renteria, OC30  
Not pictured: Jonah Gadas, OC10; Brendan McCormack, OC60



congratulations

## to the NAVFAC EXWC Graduates of the NAVFAC Aspiring Leader Development Program!

Photos by Daniel Davenport, Center for Seabees and Facilities Engineering



**Racquel Camarillo**  
**BD131**



**Brittany Hewlett**  
**EX23**



**Ryan Phillips**  
**EX423**



**Manny Solis**  
**EX912**



The NAVFAC Aspiring Leader Development Program is a foundational step in preparing NAVFAC civilian employees for roles of greater responsibility, leadership and complexity to enable the U.S. Navy and Marine Corps to remain the most powerful and capable fighting force in the world!



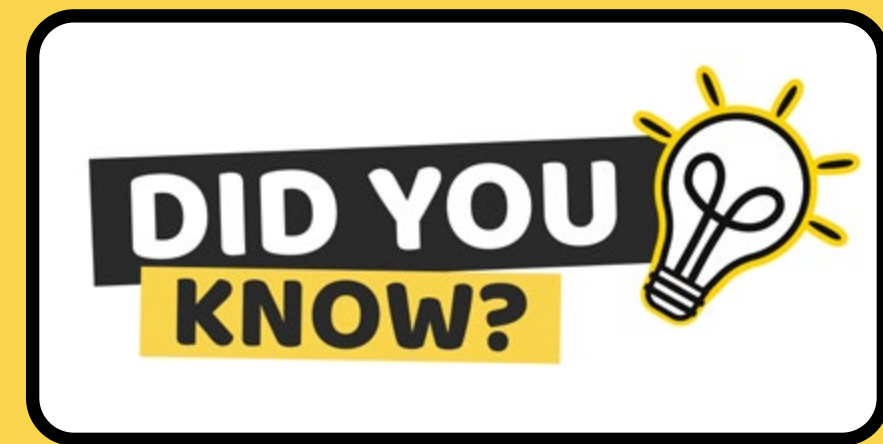
Thank you **Commanding Officer Capt. Dean Allen** for your inspiration as the featured speaker at the Aug. 29 graduation at the Naval Facilities Institute, and **Technical Director Kail Macias** for serving on the panel for the final projects of these dedicated and talented personnel!



**Learn more about the program:**

<https://www.navfac.navy.mil/Careers/Career-Compass-Workforce-Development/Career-Compass-Resource-Center/Leadership-Programs/ALDP/>





## NAVFAC EXWC Deploys Web-Based Version of ESS Software Developed at EXWC

By Mike Oesterle, Ph.D., P.E.  
Division Director, Explosion Effects and Consequences

The NAVFAC EXWC Explosives Safety Siting (ESS) Software Development Team in SH21/SH21 I has successfully deployed a new web-based version of the Department of War's Automated Site Planning Tool (ASPT).

what?

The ESS application is now hosted on Amazon Web Service (AWS) GovCloud (US) as part of the Defense Installation Spatial Data Infrastructure (DISDI) Installation Geospatial Platform (IGP). Department of War (DoW) users can access this geographic information system (GIS) mapping tool via a web browser on NIPRNet. The tool will analyze installation infrastructure against explosives safety criteria and will generate necessary site plan documents that are required for DoW facilities to store and handle explosives.

when?

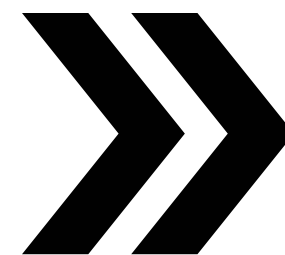
Web ESS received an approval to deploy to a production environment as part of the IGP ATO in February 2025. While the initial rollout experienced some minor networking problems, those issues have been quickly resolved, and the application is now fully operational.

why?

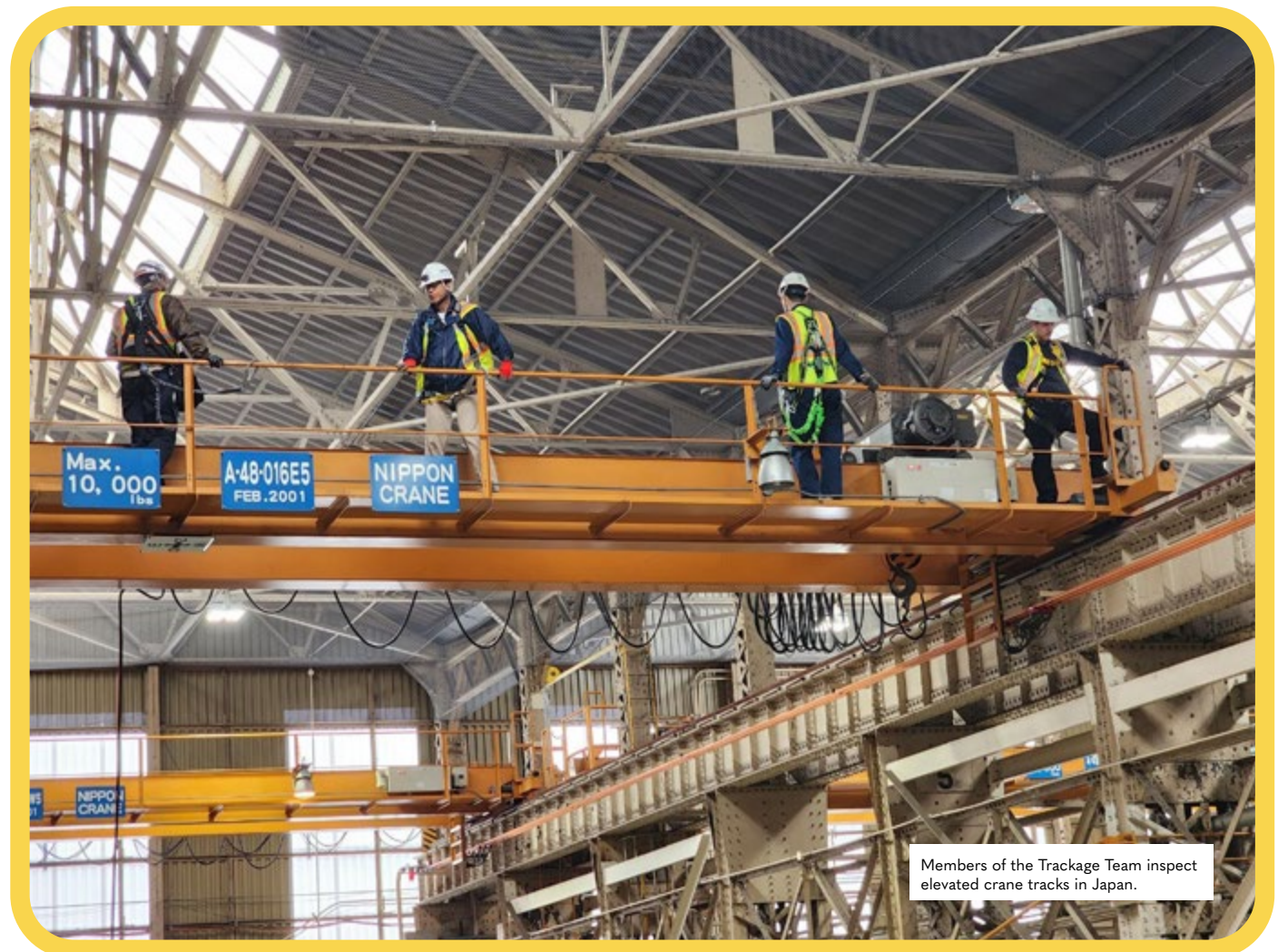
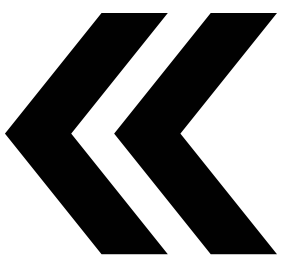
As the central design agent (CDA) for ESS, EXWC undertook this challenging effort to transition the tool to a web-based version to modernize the software and to align with DoW IT policy. The new tool overcomes many challenges with the previous desktop version by allowing for improved data reliability, collaboration between users, more efficient workflows, faster deployment of software updates, the removal of a dependency for software licensing, and greater long-term software sustainability.

### What's Next:

NAVFAC EXWC is currently working with the Air Force, Army, Navy, and Marine Corp to transition data from the ESS desktop version to the web-based application. Trainings are also underway to ensure a smooth transition. Looking ahead, further development is planned to enhance the application's capabilities for analyzing installations, streamlining the development of site plan documentation, and further improving the management of DoW explosives safety data.



The Trackage Program in SH12 at NAVFAC EXWC includes all rails that much of the Navy's transportation and weight handling equipment utilizes. Railroads, elevated crane rails, and ground portal crane trackage are the main three types covered by the program. Interpreting criteria, creating policy, governing inspection standards, managing a community of inspection professionals, and having the designated Navy Railroad Trackage Technical Warrant Holder for NAVFAC are the responsibilities of the Trackage Program. They work with the Air Force and Army to develop design criteria and provide trackage consultation and inspector training services worldwide for the Department of the Navy.



Members of the Trackage Team inspect elevated crane tracks in Japan.





Established in 2012, the Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC), headquartered at Naval Base Ventura County, California, is a command of approximately 1,200 dedicated federal civilian employees, contractors, and military personnel providing research, development, test, and evaluation, and in-service engineering to deliver specialized facility and expeditionary solutions to the warfighter. As NAVFAC's only warfare center, our engineers, scientists, analysts, logisticians, contract specialists, and other professional personnel provide technology and unique, agile solutions for the warfighter that specifically focus on expeditionary, oceans, and shore needs from enduring bases to forward deployed expeditionary locations. In 2017, NAVFAC EXWC became a Defense Department Science and Technology Reinvention Laboratory.

#### **MISSION**

Provide research, development, testing and evaluation, in-service engineering, and life-cycle management for shore, oceans, and expeditionary domains.

#### **VISION**

Accelerate innovation to enable fleet lethality at sea and ashore.

#### **MOTTO**

ANTICIPATE • INNOVATE • ACCELERATE

View past EXWC Edge issues on the Defense Visual Information Distribution Service website:

<https://www.dvidshub.net/unit/NFEEWC>

Distribution Statement A. Approved for public release: distribution is unlimited.