Undeterred: Baltimore Coast Guard Yard Work Continues Despite Bridge Collapse

U.S. Coast Guard Cutter Diligence (WMEC 616) is hoisted on blocks while in dry dock, March 21, 2024, at the Coast Guard Yard in Baltimore, Maryland. Diligence conducted a two-month living marine resources patrol in the Gulf of Mexico and

received a maintenance availability. *U.S. Coast Guard | Lt. Cmdr. Brian Waller*

On March 26, a container ship struck the Francis Scott Key Bridge, causing it to collapse. The catastrophe halted marine traffic to and from the Port of Baltimore, one of the busiest ports in the United States, for nearly two months.

However, the U.S. Coast Guard's ongoing efforts to complete midlife maintenance on its fleet of seagoing buoy tenders at the Coast Guard Yard were undeterred.

The U.S. Coast Guard Yard: A Baltimore Harbor Fixture

The U.S. Coast Guard Yard has built, repaired and maintained vessels in Curtis Bay, just south of Baltimore Harbor, since 1899. Because it is the USCG's primary facility for major repairs, vessels from around the globe journey to the yard when it's time for service.

Strategic preventative maintenance helps improve the reliability of Coast Guard vessels, control maintenance costs and reduce downtime. The Coast Guard's In-Service Vessel Sustainment (ISVS) evaluates and schedules the major maintenance and upgrades necessary for its vessels to reach or extend their service lives. According to ISVS, each Juniper-class cutter must head to the yard in Baltimore harbor about halfway through its expected lifetime for major maintenance.

Next Generation of Buoy Tenders

The Juniper-class cutters, which took to the seas in the late 1990s and early 2000s, are the second generation of purpose-built Coast Guard seagoing buoy tenders. The 16 225-foot cutters replaced a fleet of 180-foot class cutters, built from 1942 to 1944, which served for more than 50 years. The last of the 180s, the Acacia, was decommissioned in June 2006.

Juniper-class buoy tenders are multi-mission platforms that help protect American shipping interests worldwide. They have

better speed, communications, navigation and maneuverability than their predecessors. Dynamic Positioning allows them to maintain position within a 33-foot circle in winds of up to 30 knots (35 mph) and waves of up to eight feet.

These nimble, adaptable craft handle law enforcement, oil spill recovery, search and rescue, homeland security, ice-breaking operations and other marine missions. They are also instrumental in the U.S. Coast Guard's participation in the Western and Central Pacific Fisheries Commission, which oversees the conservation and management of migratory fish stocks.

The cutters also enable missions like Operation Blue Pacific, the latest wave of bilateral Shiprider agreements that partner the Coast Guard with myriad nations in Oceania to combat illegal fishing, human trafficking and other international problems.

Service to the Fleet

The standard midlife maintenance package includes upgrading technology, replacing worn decking, making safety upgrades and updating the sewage system to reduce environmental impact. Maintenance professionals at the yard remove obsolete, unsupportable or maintenance-intensive equipment, making updates to the buoy crane, controllable pitch propellers, boat davits and HVAC systems. They also perform comprehensive system-wide checks and fix any issues they uncover.

The first of the Juniper-class cutters began its midlife maintenance in 2017; the last, the Hollyhock, should finish this year. The yard professionals have streamlined the process, which usually takes about a year. Once a vessel is finished, it is relaunched and tested in the harbor. Upon passing inspections, it's ready to return home, fully prepared for another two decades or more of service.

Around the World in 80 Days

Taking a vessel to the Coast Guard Yard isn't like dropping your car off at the local dealership – most of the Juniper-class cutters are based many thousands of miles from Baltimore. The voyage itself can take weeks. However, because the mission is primarily to transport the vessel, there are usually some unexpected perks along the way.

As the old saying goes, Sailors go to sea to see the world. Voyages to the yard allow Coast Guardsmen to sail outside their base areas and experience the world beyond their shores. A maintenance trip can include crossing the equator, the tropic of Cancer or Capricorn or the international date line; many include a journey through the Panama Canal.

It can also allow the crew to enjoy some well-deserved liberty time ashore at desirable vacation destinations. For example, the voyage from Hawaii to the Coast Guard Yard takes at least six weeks. Port calls along the way can include stops in Puerto Vallarta, Cozumel and Key West.

Sometimes, these stops include Coast Guard business, such as picking up ammunition or dropping off cargo. Other port calls simply involve restocking supplies and refueling. Either way, they offer a respite from Coast Guardsmen's usual day-to-day operations and a chance to see some of the world's most beautiful coastal towns.

Overcoming Obstacles, Responding to Challenges

Trips to the yard are often delayed for a myriad of reasons, like all long sea voyages. Storms, fog and other weather issues can necessitate altering a vessel's course or port call. Lack of pier space is a recurring theme because ports usually prioritize Coast Guard vessels below profitable cruise liners and other commercial ships.

A vessel may divert to a nearby port if it has enough food and fuel to change its course. Otherwise, it can wait at anchor for hours or even days to obtain pier space. Fortunately, the

Coast Guard excels at changing tack and responding to unexpected delays. Sometimes, thinking outside the hull leads to clever solutions.

Finding himself lacking pier space outside of Puerto Vallarta, Mexico, one enterprising captain used the local tourist amenities to make the best of the delay. After dropping anchor, she called a water taxi to pick up the crew. They spent a day ashore enjoying the town's historic beauty and culinary delights rather than impatiently waiting for the traffic to clear.

Coast Guard civilian employees remove the shaft of the Coast Guard Cutter Hollyhock, a 225-foot seagoing buoy tender home-ported in Port Huron, Mich., during a dry dock at the Coast Guard Yard in Baltimore, Aug. 1, 2013. The Yard is the service's sole shipbuilding and major repair facility, and an essential part of the Coast Guard's core industrial base and fleet support operations. U.S. Coast Guard | Petty Officer 2nd Class David R. Marin

Reached the Yard, Now What?

Once the vessel arrives at the yard, its crew has a new mission: preparing it for dry dock maintenance. Everything onboard must be removed, inventoried and transferred to Conex shipping containers or sent to the dumpster. Some items remain in storage at the yard while the hull is serviced in dry dock, while others are sent back home with the crew.

Lieutenant Commander Jessica McCollum, who has shepherded several cutters to the yard for their midlife service, summarized the goal of this process: “Pretend like it’s a toy ship. Take it in your hands, turn it upside down and shake it. If nothing falls out, it’s ready for the yard.” When she took the USCGC Walnut up for service in 2020, it took about three weeks to finish this offloading process.

Once the commanding officer signs over the hull, the crew generally transfers to the vessel finishing its maintenance. If it’s not ready, or there are other delays, they may have to cool their heels in the harbor. Many things can delay the process of completing midlife maintenance, most of which are far more mundane than the bridge disaster.

The seasoned professionals at the Coast Guard Yard don’t release a vessel until they’re satisfied it is shipshape and Bristol fashion. Often, their scrupulous inspection uncovers other issues; a ship doesn’t sail until these are fixed, tested and cleared. Such was the case with the USCGC Hickory, which was scheduled to leave the harbor at the time of the Key Bridge collapse but wound up delayed due to additional maintenance needs.

Flexibility, Versatility and Readiness

During a delay, the crew may spend weeks or months in Baltimore performing other duties, take personal leave or return to their home post, depending on their job. After the bridge collapsed, some Coast Guardsmen were assigned temporary duty cleaning up the mess, ensuring safety and enforcing

security in the harbor. Coasties are often tasked with search and rescue operations and responding to maritime disasters, as they are often the first responders on the scene.

Surprisingly, the extended closure of Baltimore Harbor didn't hamstring the Coast Guard cutters like it did commercial shippers or larger military vessels. This is partly because these vessels and their crews are incredibly adaptable. The port opened an auxiliary channel quickly and the Coast Guard quickly pivoted, enabling their mission to continue.

As McCollum prepares to collect the Hollyhock, the last cutter to complete midlife service, she will set sail with an entirely new crew. Just like after a new vessel is commissioned, these Coast Guardsmen must quickly learn to work well together as a team and respond to adversity during the weeks-long voyage home. Fortunately, as advertised, the U.S. Coast Guard is Semper Paratus: Always Ready. .

From the July/August issue of Seapower magazine. Jamie L. Pfeiffer practiced in Illinois, Oregon and Washington states before retiring from active law practice. She is currently based in Chicago.

New Contract Award to Help Train Fleet to Counter Electronic Warfare

The U.S. Navy awarded the Phoenix Air Group Inc. a contract for Contracted Air Services to simulate airborne electronic warfare threats to help train shipboard personnel and squadrons. The contract includes use of 10 contractor-owned and operated aircraft, such as the Learjet 36 (pictured). (Photo courtesy of Phoenix Air Group Inc.)
Jul 18, 2024

NAVAL AIR SYSTEMS COMMAND, PATUXENT RIVER, Md. – The U.S. Navy awarded the Phoenix Air Group Inc. a $165 million contract June 28 for Contracted Air Services (CAS) flight hours to simulate a variety of airborne electronic warfare (EW) threats to train, test and evaluate shipboard personnel and aircraft squadron weapon systems operators and aircrew.

“Fleet training against airborne electronic attack forces is a priority and a critical path to achieving electromagnetic spectrum superiority,” said Capt. Greg Sutton, Adversary and Specialized Aircraft Program Office (PMA-226) Program Manager. “The CAS EW jet services contract provides an ability to simulate both the threat and overall spectrum density of the

current and future high-end fight of which is essential to effective aircrew training.”

The contract includes use of 10 contractor-owned and operated aircraft that can support up to 5,000 flight hours of EW jet capabilities per year for fleet scheduling on the East and West Coasts. They can be used in a variety of venues, from basic “schoolhouse” air intercept control training, large multinational exercises, and small, single unit training exercises, including target/banner tow missions supporting the Navy, Department of Defense (DOD) and non-DOD agencies.

“CAS affordably fills critical and mandatory training requirements, mitigating readiness gaps and capability divestments,” said PMA-226 CAS EW Integrated Product Team Lead Matt Rhodes. “It provides fleet air defense training to include evaluation of evolving threats via uniquely modified aircraft configured as required to simulate Fleet Forces Command identified hostile EW near peer threats for air-to-air and air-to-surface training events.”

The EW jets contract is a firm-fixed-price, indefinite-delivery/indefinite-quantity contract with work scheduled to begin this August and completed in August 2029.

Chief of Naval Operations Hosts Futures Game at U.S. Naval War College

From CNO Public Affairs, July 18, 2024

Newport, R.I. – Chief of Naval Operations (CNO) Adm. Lisa Franchetti hosted the CNO Futures Game at the U.S. Naval War College in Newport, Rhode Island, July 16-17.

Franchetti emphasized the need for leaders across the Joint Force to think, act, and operate differently, and seek ways to integrate conventional capability with hybrid, unmanned, and disruptive technologies, because tomorrow's battlefield will be incredibly challenging and complex.

"It is our duty to plan for the future and ensure our Fleet is always ready to preserve the peace, respond in crisis, and win decisively in war," said Franchetti. "The Navy is never going to fight alone. We will work hand-in-hand with our Joint teammates and Allies and partners. To that end, I challenge you to have an open mind and think about the capabilities, people, and broader warfighting ecosystem across the Joint Force that we're going to need to effectively carry out our

missions.”

Futures Game is organized by the Deputy Chief of Naval Operations for Warfighting Development Vice Adm. Dan Dwyer.

“The Navy uses events like the CNO Futures Game as part of our ongoing analytic efforts to shape and inform naval strategy, analysis, operational concepts, and warfighting requirements,” said Dwyer. “By examining potential future states, we can characterize the operational problems the Navy will face today and tomorrow as well as what roles the Navy may be asked to perform in support of our national security. Events like the CNO Futures Game support this process and allow us to better characterize future challenges.”

Robust wargaming and analysis underpin Navy efforts by providing analytic rigor and a comprehensive examination of strategic and operational concepts to support CNO decision making on the most consequential issues facing the Navy.

“We know our enduring functions: sea control, power projection, deterrence, maritime security, and sealift, but it is our ability to test alternative concepts, reinvigorate analysis, and explore future force structure options that will enable us to field a force capable of responding to all threats—anywhere and anytime,” said Franchetti.

As a critical component of the Navy’s Analytic Master Plan (AMP), the U.S. Naval War College (NWC) is designated by the CNO as the Navy’s pillar lead for wargaming. NWC spearheads efforts to integrate all research activities within the naval wargaming enterprise and facilitates the promulgation and integration of research findings across the naval analytic community.

Wargaming has been integral to NWC since 1887. While the tools and technology used in simulations have evolved over the past century, the value of wargaming in maritime leadership development remains strong. Today, NWC conducts more than 50

gaming events per year, ranging in variety from complex, multi-sided computer-assisted games to simple, single-sided seminar games.
This was Franchetti's first time hosting the Futures Game as CNO. She hosted the Futures Game in 2023 as Vice Chief of Naval Operations.

Parsons Offers Counter-UAS Technology to Protect Marine Corps Installations

– Drone Dome: Fast-Deployed Configuration. Credit: Parsons
By Richard R. Burgess, Senior Editor

ARLINGTON, Va. – The U.S. Marine Corps is seeking counter-unmanned aerial systems technology to protect its installations. One of the companies bidding to be the provider is Parsons, in partnership with Rafael Systems Global

Sustainment LLC (RSGS).

Counter-Unmanned Aerial Systems (CUAS) is a sector of defense technology that has been of increasing focus over the last decade and has become even more to with the extensive use of UAS in the Ukraine War, the Israel-Hamas War, and the Houthi drone attacks against naval and commercial shipping in the Red Sea.

The need to provide force protection extends not only to deployed forces but to their installations.

The Marine Corps solicited proposals for "installation counter-small UAS," said Christopher Hamilton, vice president for innovative technology solutions at Parsons, in an interview with Seapower. "They're looking to protect Marine Corps facilities and infrastructure around the world from the small UAS threat, primarily Group 1and Group 2 UAS, but some Group 3 potentially as well. That's the lower half of the UAS spectrum, but those drones, as we've seen, can do quite a bit of damage if configured in the right way and with explosives, or just wreak havoc in terms of security responses to drones, as we've seen with sporting events over the past year or so."

Parsons, in its proposal, is the prime solutions provider, delivering overall program management, sustainment, and systems integration, while RSGS is providing the Rafael Drone Dome System, a Parsons spokesman said.

The Marine Corps requirement is focused on its permanent installations in the United States and overseas, Hamilton said, noting that Parsons has "years and years of experience of developing, integrating, and deploying critical infrastructure protection systems, and over the past few years, CUAS has become really the most critical of those infrastructure protection components.

He said the Marine Corps requirement for infrastructure protection played to the strengths of Parsons, which has been

“deploying CUAS systems for other clients around the world to do very similar functions.”

Parsons’ analysis of the Marine Corps requirement came down to providing two capabilities: the most effective system and the most available system – 100% of the time.

The Drone Dome system would be tailored specifically for the Marine Corps. Hamilton said it was the most battle-proven system and has been deployed in several different theaters with great success in defeating threats.

In addition, Hamilton said that Parsons “has the knowledge and experience to manage a global logistics enterprise, where you’re looking to maintain near 100% availability of systems. We do that today.”

The Drone Dome system includes a command-and-control system, RF sensors, radars, and kinetic and non-kinetic effectors that are options. The Marine Corps requires a modular open systems approach to allow the system to adapt to evolving threats. It will make maximum use of artificial intelligence.

“It’s clear that the Marine Corps wants a system that evolves over time,” Hamilton said.

Parsons, based in Chantilly, Virginia, has a center of excellence for CUAS at Summit Point, West Virginia, where it assesses CUAS threats.

Parsons delivered its proposal to the Marine Corps in April. A single contract award in the competition is expected this summer. The program is to have a duration of at least 10 years.

USS George Washington Arrives in San Diego for Japan Carrier Swap

NAVAL AIR STATION NORTH ISLAND (July 10, 2024) – Nimitz-class aircraft carrier USS George Washington (CVN 73) arrives at Naval Air Station North Island, California, July 10, 2024. (U.S. Navy photo by MC1 Class Aron Montano)
By Richard R. Burgess, Senior Editor

ARLINGTON, Va. – The Nimitz-class aircraft carrier USS George Washington (CVN 73) arrived at Naval Air Station North Island, California, July 10, 2024, after its "round-the horn" voyage from Norfolk, Virginia, around Cape Horn to the Pacific Ocean. The carrier soon will succeed USS Ronald Reagan (CVN 76) as the forward-deployed U.S. Naval Forces Japan aircraft carrier at Fleet Activities Yokosuka, Japan.

The George Washington departed Norfolk on April 25, 2024, and

completed a series of U.S. Southern Command exercises with Argentina, Brazil, Chile, Colombia, Ecuador, Peru, and Uruguay, and conducted port visits planned for Brazil, Chile, and Peru. Embarked in the George Washington were the Carrier Strike Group 10 staff and aircraft and personnel of Carrier Air Wing Seven (CVW-7).

At North Island, the George Washington will embark Carrier Air Wing Five (CVW-5) from USS Ronald Reagan and replace that carrier as the one forward-deployed to the U.S. Seventh Fleet.

The George Washington was the forward-deployed carrier based in Japan from 2008 until 2015, when it was replaced in Japan by the Ronald Reagan. In 2017, the George Washington entered a Refueling and Complex Overhaul at the Huntington Ingalls Industries' Newport News Shipbuilding yard in Virginia, an evolution that took six years, including the duration of the COVID-19 pandemic. The George Washington's nuclear propulsion plant is fueled to run another 25 years.

Marine Corps Commandant Sheds Light on Reaper UAV Capabilities

By Richard R. Burgess, Senior Editor

ARLINGTON, Va. – The Marine Corps' MQ-9A ER [extended-range] Reaper unmanned aerial vehicles (UAVs) are capable of carrying an electronic warfare pod that renders the UAVs "mostly undetectable" to enemy radars, a senior Marine Corps official said.

General Eric M. Smith, commandant of the Marine Corps, speaking July 2 at the Brookings Institution, a Washington think tank, discussing the capabilities of a Marine littoral regiment and the forces supporting them – including the Reaper UAVs – pointed out the sensing mission of the regiments in the first island chain in the Pacific.

"What they bring with them is a sensing and making sense capability;" Smith said. "Some of the programs are classified. Some of the pods that go on our MQ-9s are classified. It's called a T-SOAR pod, and what it does is it can mimic things that are sent to it that it detects, turn it around, and send it back so that it becomes a black hole. It becomes mostly undetectable."

"Without crossing classification levels, it has the ability to somewhat disappear off of an enemy radar," he said later in

the webinar, in response to a reporter's question. "I'll just leave it at that."

Although not clear, the commandant may have been referring to the Scalable Open Architecture Reconnaissance (SOAR) pod, which L3Harris describes as a "groundbreaking, intelligence, surveillance, and reconnaissance (ISR) solution from L3Harris Technologies and General Atomics Aeronautical Systems, Inc. (GA-ASI). SOAR integrates L3Harris' industry leading full-band signals intelligence (SIGINT) capability with a medium altitude long-endurance GA-ASI Predator B wing-mounted pod to offer unparalleled options for warfighters in the ISR domain. SOAR provides significant mission expansion for Predator B operations against modern threats in new operating domains and a new dimension for remotely piloted aircraft systems."

The builder of the SOAR pod and the MQ-9, GA-ASI, says on its website that the SOAR pod "provides long-range detection, identification, and location of radar and communication signals of interest. SOAR enables MQ-9 or other aircraft operators to provide standoff surveillance – seeing threats before threats can see the aircraft – and communicate actionable intelligence. The system leverages significant U.S. government technology investments in strategic intelligence, surveillance, and reconnaissance systems to provide a low-cost, widely deployable capability for a variety of National Security Council and Combatant Command signals intelligence collection objectives."

GA-ASI lists key benefits of the 634-pound SOAR pod as:

- Enables long-range persistent surveillance of enemy communications and radar emitters
- Enables cooperative collection and target exploitation capabilities

- Features real time collection and onboard storage for post-mission analysis

- Allows for true multi-intelligence target identification and tracking in real time

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Iron Mountain Anticipates Increase in Work for the Navy Under GPO Contract

ARLINGTON, Va. – An information technology company expects its business with the U.S Department of the Navy to increase as task orders come under a government contract from the U.S. Government Printing Office (GPO) for document scanning and conversion services.

In late April, the GPO awarded Iron Mountain a contract “to

provide off-site document conversion and scanning services for the Defense Logistics Agency (DLA)" the GPO announcement said. "The contract covers a range of services including document preparation, scanning, optical character recognition (OCR), indexing, and output to various media. The estimated value of the contract is not specified, but it indicates 15-25 orders per year, with 5-10 being multi-year efforts, and scanning requirements ranging from 1,000 to 9,000,000 images per order. The contract term is from April 26, 2024, through February 28, 2025, with up to four 12-month option periods."

"Currently, with the Navy, we are kind of in our infancy in joining and partnering with them," said Melissa Carson, general manager of Iron Mountain's Government Solutions Group. "The thing we have with them is the traditional Iron Mountain business, records information management. We have a BPA [blanket purchase agreement] with them, a master agreement with them [the Navy's records office], to help them with all their record storage needs across the whole naval installation.

Iron Mountain provides records management and storage services to federal, state, and local governments as well as public education institutions. The company, with corporate headquarters in Nashua, New Hampshire, maintains 1,400 sites across the world in 110 countries. The company's Government Solutions Group is based in Herndon, Virginia.

Carson said the company also has partnered with some of the system integrators and has acquired some other companies.

"We actually have made a couple of acquisitions here in the last couple of years and really have a robust solution that takes all this e-waste within that ecosystem and not only just takes it off their hands securely," she said. "We've got proprietary software that does the data erasure that meets DoD standards off of hard drives, but also with the recent acquisition of Regency, we actually now have a goal of

recycling components. We take it down to bare metals and are able to actually only put 8% in the landfill."

Iron Mountain digitized all of the Veterans Administration's personnel files, part of which involved digitization of a million boxes of records.

Iron Mountain expects task orders from the Navy similar to its work for the Veterans Administration.

"Iron Mountain can do intelligent document processing with Insight AI [artificial intelligence], with one touch, create the image, classify it for records storage and retention, along with the metadata off of it," Carson said, noting that her company can pass the data and images back to the agency—the usual scenario—or provide off-site storage.

"We now with this Insight tool, have used the power of AI and machine learning models with natural language models behind it," she said. "We're now able to do millions of documents a month with 30% less labor, equipment, and facilities. We've been able to absolutely increase that capability and throughput so that one is lower priced – because it was also [prohibitively] expensive for many of these agencies to even start with that – so it's not only saved that but it's also eight times faster. So that's why we're able to digitize millions [of records] in a month."

Carson pointed to one example: "For a large financial agency in the government we were able to do a billion images in less than a year at 96% accuracy of pulling data off of these records. The old-fashioned way would have taken 30 years by 800 people.

"Many agencies are finally getting policy changes so that once it is digitized, they do not have to hold on to that paper record," she said. "Iron Mountain is full-life cycle: "We take it and shred it and we put all of that paper back into the paper industry. We are one of their biggest suppliers to be

able to trade with recycled paper.”

The tedious task of scanning documents has led to improvements in scanning technology.

“We’ve been very influential with the scanning equipment suppliers,” Carson said. “We’ve forced them to innovate, too, so there is a particular machine that we’re actually using for the IRS [Internal Revenue Service]. We are actually taking their paper tax returns – so about nine million people still file with paper – and they come in crumpled, with coffee stains and all that. With this new scanning technology, we don’t need to do all of that repair anymore. Literally, it is sensitive enough that you scan it through even with a tear, even with coffee stains, even rumpled, and it looks like a perfectly good piece of paper.”

Iron Mountain even has infrared scanners for fragile old onion-skin paper that never touches the paper.

The company is working to make data storage technology more robust, and “future-proof,” to avoid obsolescence overtaking the technology and ensuring that digital records are accessible and readable. The company also maintains an inventory of obsolete technology in order to read older analog and digital records.

Q&A: Ashley Johnson, Technical Director, Naval

Surface Warfare Center, Indian Head Division

Ashley Johnson, technical director of Naval Surface Warfare Center Indian Head Division, briefs the center's modernization plan to members of the southern Maryland industrial community. *U.S. Navy | Matthew Poynor*

The Naval Surface Warfare Center Indian Head Division (NSWC IHD) is a working capital organization that develops and manufactures energetics for the Navy, Marine Corps and other services. The IHD in going through a $1.9 billion upgrade called the Energetics Comprehensive Modernization Plan (ECMP) to improve its capabilities and infrastructure to meet the requirements of the future.

Ashley Johnson, a Senior Executive Service civilian, became the technical director of Naval Surface Warfare Center, Indian Head Division in 2014. He discussed the role of the Navy's own manufacturer of energetics with Senior Editor Richard R.

Burgess. Excerpts follow.

What is the mission of the Indian Head Division?

JOHNSON: The short answer is full-spectrum energetic materials, from cradle to grave. We do basic research, applied research, advanced technology demonstrations, manufacturing, logistics, engineering and fleet support. In the sense of energetic material systems, most people would immediately equate those two things like warheads, rocket motors, and bombs and so forth but it's really much more expansive than that because it can involve fuzes and handling equipment associated with the systems – such as the packaging, handling, shipping and transportation.

Now that the wars in Iraq and Afghanistan are over for the United States, and with the growing tensions of Russia and China, how is your work shifting?

JOHNSON: My previous job was the director of Marine Corps Science & Technology and deputy chief of Naval Research, Office of Naval Research for expeditionary warfare and combating terrorism. Our investment in the GWOT [the Global War on Terrorism] writ large was really about finding the enemy: It was a C4ISR, big data, intel, logistics kind of thing, because the assumption, deservingly so, was that we could defeat our enemy without any issue once we found them.

As a result, for that period of time, not a lot was done in the United States in the development of state-of-the-art and attention to detail on the munitions industrial base, commercial or organic. I say that not accusingly, just saying that as a matter of fact. Unfortunately for us, all of our potential adversaries or adversaries – Russia, China, Iran, and North Korea – did not take that vacation. We had a large comparative advantage in that ammunitions space – range, speed, terminal effects, signatures management, safety to some extent. They recognized they were behind, and they continued

to invest in those areas, so, we have lost a fairly large comparative advantage as we focused on the necessities of GWOT.

We're approaching something that looks an awful lot like the Cold War as it looked in the '70s and '80s with the Soviet Union, which had a large capability. The question is clearly not can we find them; the question is, can we defeat them because they have systems that can rival ours. The situation is driving us toward really looking at ourselves in the mirror and saying, what is our state-of-the-art? Is it representative of what we are really capable of or is it representative of what we're willing to continue to keep using? What is our industrial base and are we capable of manufacturing and providing at the point of use all of the things that we think we need in the context of something like we're seeing in Ukraine where Russia is coming to grips with that. You can use a tremendous amount of ordnance in these kinds of sustained conflicts. Do you have the industrial base with which to sustain that operation?

I was surprised to learn that Indian Head is not just an RDT&E activity but also a major manufacturing facility.

JOHNSON: Indian Head has been in energetics since 1890. Indian Head was established initially as a proving ground for Navy guns, and it literally was cut out of the woods in southern Maryland for that purpose. After its victory in the Battle of Manilla Bay, the Navy recognized that the only vulnerability in its crushing defeat of the Spanish Navy was the fact that the Spanish Navy used smokeless powder. Although it didn't really factor much into the outcome, it was recognized as a significant liability.

And so, the Navy wanted to pursue the manufacture or acquisition of [smokeless] powder. A commercial vendor was busy manufacturing propellant for European markets and did not have the capacity to produce it for the U.S. Navy. Very

shortly after that, a bill was put through Congress and Indian Head was established as a naval powder factory. The Navy started to make its own propellant at Indian Head over a hundred years ago. Indian Head continues to be the source for a lot of unique munitions.

Of course, that's changed over the years. For example, a plant was built at Indian Head solely for manufacture of every pound of the propellant for the Polaris Missile System. It did the same thing for [the] Poseidon missile.

Interesting. Is there anything you're supplying to Ukraine with its war with Russia?

JOHNSON: I really cannot comment. I would just say we're relevant to that theater also and I'll leave it at that.

Indian Head has been involved at the ground floor of supplying munitions for the Navy for over a hundred years and that's kind of what we're just being asked to do again.

Specifically, what are we concerned about right now? Solid rocket motors. The Standard Missile figures prominently in this conversation, as do things like Tomahawk. There used to be 12 manufacturers in the United States for tactical rocket motors and now there are only two commercial vendors: Aerojet Rocketdyne in Arkansas and Northrop Grumman, which is using a Navy facility in Rocket Center, West Virginia. That's it. The largest capacity left in the United States to produce cast composite rocket motors is Indian Head. We have a very large latent capacity that isn't really being used yet which is why those partnerships are so exciting. Aerojet has partnered with the Navy, and we are going to make rocket motors here for our Standard missile to augment the commercial supply which is exactly where our mission is. We go into areas where we are needed, or we go into areas where no one can go.

Ashley Johnson speaks with scientists and engineers in one of the Mix, Cast, Cure plants, in front of a 420-gallon vertical mixer at NSWC IHD. *U.S. Army | Staff Sergeant Arthur Jones*

Indian Head is viewed as part of the organic – government-owned – industrial base. There is no competition with commercial vendors going on right now. All of us in the munitions industrial base recognize it's an all-hands-on-deck situation. This is the only way that we're going to meet this need. It's kind of the way we've been doing business for over a hundred years anyway. It's just for the last 10 or 15, we sort of forgot about it.

Why is the Energetics Comprehensive Modernization Plan (EMCP) needed?

JOHNSON: We are a very expensive facility. The net replacement value for Indian Head is between $5 [billion] and $6 billion. You'd be hard-pressed to recoup that or duplicate it if I gave you that much money just because of how difficult it is to build facilities like Indian Head. If you have a facility with that kind of unique capacity and capabilities,

it takes a lot of money to take care of it.

If you go through a period of time – 10, 15, 20 years – when you use munitions essentially as a bill payer for other requirements, you don't generate the resources you need to take care of facilities like Indian Head. When you have to exercise it again, you've got a "big principal" that you've got to pay down. ECMP involves the restoration and sustainment of weight and capacity that the Navy owns. We can do things, but we're a little out of shape, and so, it's a readiness issue.

The other part of ECMP is about modernization and increasing capacity. Our commercial partners – Aerojet Rocketdyne and Northrop Grumman – are well over 90% and probably closer to 95% in the utilization rate of whatever capacities they have. There is a need for the industrial base of the United States, commercial as well as organic, to grow to meet the demand signal that we're seeing for munitions and so forth. Ultimately, we're getting to 11 times our current capacity to meet the demand signals that we see from all of our customers as well as our commercial partners. That second piece of ECMP really helps build out the capacity to meet the demand.

The third and probably the most interesting, at least for me, element of ECMP is about hybridizing our business and investment model. In the past, we had to operate like a business since we're a working capital fund activity as opposed to a general funded activity. That creates problems in periods of a bear market because, if I'm asked to recoup all my cost from just my customers, when people aren't buying things, it becomes hard to amortize the costs. That's when things don't get done. That's when maintenance becomes an issue because you have to start making choices. And so, what we're doing with ECMP is trying to establish more of an ownership and responsibility at the Navy level off the top so that those things get paid for first and then we enter into more of a time and materials conversation with our customers.

So, it’s the hybridization of the business and investment model of Indian Head so that there is an appropriated line of accounting that gets put into this equation in addition to a working capital.

What are some of the major projects or improvements that are involved?

JOHNSON: Some of the initial stuff is really quite simple: fixing loading docks that have cracks in them; fixing secondary roads that have large potholes that I’d rather not drive nitroglycerine over; general improvements to the roads, lighting or other utilities. We may need a half a million dollars to unlock the latent capacity that’s there. I just can’t get at it because I’ve got these secondary and tertiary issues which are preventing me from using it.

With modernization, we’re talking about very specific improvements like casting and curing [of rocket propellant and warheads]. A major part of being able to make rocket motors is being able to mix the composite propellant. It needs very specialized vertical mixers. We have them in all sizes, but we need more of them. A major project improvement would be a second cast composite plant where we would increase the capacity of a lot of those unit operations, but also, do it in sort of a state-of-the-art. Indian Head’s cast composite plant was built 35 to 40 years ago. You wouldn’t do that now the same way, so we’re going to take advantage of efficiencies in industrial engineering and state-of-the-art equipment to basically double down or triple down on the capacities that we currently have.

So, really, the focus that is most meaningful is our cast composite manufacturing and that addresses modern rocket motors as well as warheads.

By cast composite, you mean mixing the chemicals and then molding them for a rocket motor?

JOHNSON: Yes. The process is very similar to making a cake batter. The very first thing that we do is get all the ingredients, then we put them in a mixer that looks an awful lot like a KitchenAid mixer. It's obviously a little more involved than that but effectively does the same thing. We blend the ingredients, then once we get them out, we cure the mixture and it hardens in the places we want it [rocket motor or warhead body]. And then it gets assembled into an all-up round. That entire process involves mixing, casting and curing and the transportation of those assets.

What categories of engineers do you need?

JOHNSON: Engineers of just about every flavor, right now primarily mechanical and chemical. Actually, mechanical dominates but we need both. But I need industrial engineers, I need electrical engineers, so just about every type and flavor. I also need the hard scientists, too: physicists and chemists.

We have another mission that has to do with chem/bio which I won't get into right now, but it's a big part of what we do, so we have biologists. We have life scientists here as well. We've got maybe about a thousand technical people all the way through Ph.D., close to a hundred Ph.D.s here in the hard sciences. But I have a need for program managers, comptrollers and business folks. Now with this huge modernization effort I need guys who actually need to be able to do construction and construction management whether it be contracting or building management.

What is Indian Head's place in the local economy?

JOHNSON: We've got about 2,500 government civilians and about 500 contractors. I might have to add 500 to 700 individuals just in our manufacturing operations alone to meet the demand signal. They're going to government civilians, contractors, and partners like Aerojet people who are going to be working

here side-by-side with our guys. It’s a big shot in the arm or opportunity for the state and for the local communities because we’re just going to get bigger. Indian Head is already, on any given day, the largest employer in the county.

How do you plan to attract extra employees?

JOHNSON: That’s the easy part. It’s not hard to get people excited about being a patriot. It’s not hard to get people excited about coming to do what we at Indian Head. Energetics work is pretty exciting. You make things that go boom and whoosh, and it’s also exciting science. So, attracting talent is easy; it’s the retention of the talent that’s harder. Can you compete for people’s attention in terms of how the environment looks around? Is it a nice place to live? Are there things to do? We’re working with the state and the county on that because where we are located it’s kind of out of the way and that might be for obvious reasons, but it’s still an issue with regard to being able to retain people. We’ve got to try to make that ecosystem around us as inviting as possible.

The other piece is really about people who are drawn to this work like to do stuff and, like over the last 10 or 15 years, you can’t retain talent when people aren’t doing anything. And so, a lot of people have left the market or, if they’ve got into it, they got bored because we really weren’t buying a lot in the area of munitions and/or similar systems, and so, they’ve left. I think the demand signal will take care of that. But it’s important to commit to this, because, after these surges are over, we need to maintain our focus on this area.

Q&A: Kelly Robertson-Slagle, Director of Development, Charles County, Maryland

The $1.1 billion build-up of the Naval Surface Warfare Center Indian Head Division (NSWC IHD) will affect not just the facility but also the surrounding community. Kelly Robertson-Slagle is the Director of Economic Development for Charles County, Maryland, home of NSWC IHD. She works closely with the NSWC IHD to coordinate county development and support its infrastructure improvements and personnel growth.

How will the Navy's planned investment at Indian Head affect Charles County's economy?

ROBERTSON-SLAGLE: First and foremost, there will be new

business opportunities for our existing county businesses. By that, I mean the Navy's $1.1 billion investment will be spread across 500 infrastructure projects over the next 10 years. This investment will open up opportunities for our local businesses to potentially bid on these projects. Having that type of investment here in Charles County will be extremely impactful.

Second, new commercial development and redevelopment opportunities translate into additional commercial tax revenue. Right now, there are about 2,700 people located behind the gate of the base, and manufacturing is on a nine-to-five schedule. Within the next five years, manufacturing on the base will occur 24/7, which means more foot traffic. We expect an increase in commercial enterprises setting up on the western side of Indian Head, attracted by the growing population. We hope to welcome various businesses, from retail stores and restaurants to service providers, to address the current scarcity in these sectors.

Equally important are the new job opportunities and workforce training opportunities that will be created. As the base's manufacturing facilities upgrade to meet modern "smart arsenal" standards, there will be a substantial need for a knowledgeable, 21st-century "smart workforce." We are collaborating with NSWC-IHD and various strategic partners, including the Charles County Public School System, the College of Southern Maryland, the Energetics Technology Center and other private energetics industry partners, to develop advanced workforce programs.

These initiatives will train individuals in the specialized skills necessary for operating energetics manufacturing effectively, and we want to ensure that we're developing the appropriate level of apprenticeships. Our aim is to provide residents with experience at NSWC IHD with full-time employment opportunities locally. We are actively seeking these opportunities and are also focused on sparking interest

in younger generations to sustain local workforce engagement. We must be able to expand our workforce pipeline in Charles County.

We're also engaging with our K-12 system to provide students with opportunities to interact with the base, experience the technology and gain an understanding of the energetics fields. Our goal is that whether they pursue vocational training, higher education or construction-related courses, their experiences will encourage them to return to Indian Head. We hope they know they will have a job to return to with excellent pay, a good quality of life, and a place where they will want to set up shop and raise their families.

What is the estimate of Indian Head's annual contribution to the county's economy in terms of dollars?

ROBERTSON-SLAGLE: In FY 2022, the total payroll for Indian Head in Maryland was $346 million, with an additional $44.6 million generated through Maryland-based contracts. Of those dollars (between payroll and Maryland contracts), 68% went to employees or businesses in Charles County.

Beyond their annual tax contributions, the county benefits from NSWC IHD's presence. Charles County Public Schools and the College of Southern Maryland gain in-kind mentorship opportunities, such as sponsoring science fairs, providing internships, and funding robotics programs and research initiatives. They've been fantastic community partners to us for many years, and we don't see that slowing down at all. If anything, we see that ramping up a bit.

What type of infrastructure do you have to consider with the expansion?

ROBERTSON-SLAGLE: The base borders the town of Indian Head, which is its own municipality (one of three in Charles County). From a county perspective, we continue to work hand-in-hand with the Town of Indian Head to help address

infrastructure improvements that must occur with the increase of employees and traffic. One of our monitoring priorities is Maryland Highway 210, from the county line all the way to the base gate. In collaboration with the Town of Indian Head, we are addressing traffic flow, safety, and walkability within the town.

Additionally, broadband infrastructure is always a top priority, not just for the western side and the base but across the entire county. We are particularly proud of a recent project, completed in partnership with the state and the town, which extended high-end fiber optics to the base. This project, which was one of the 500, has enabled the base to implement a closed-loop fiber infrastructure behind the gate.

The base recently signed an MOU [memorandum of understanding] with our local electric co-op, Southern Maryland Electric Cooperative, to take over management and upgrades of the electrical infrastructure behind the gate. The county is certainly committed to supporting those efforts as well.

Kelly Robertson-Slagle, left, speaking during the Charles County Economic Development Department's 2023 fall meeting. *Charles County government*

Does Charles County have the workforce it needs, or do you expect a large influx of new residents?

ROBERTSON-SLAGLE: It's a combination. Historically, Southern Maryland has largely been a bedroom community for federal government employees. Currently, we have slightly more than 5,000 Department of Defense [DoD] civilian employees residing in Charles County. To us, that's a serious selling point! We already have a very strong DoD civilian workforce here. Regionally, up to 500,000 professionals could potentially be part of this hiring pool. We are robust in this regard. Valid DoD or contractor opportunities at the base could attract federal employees who currently commute outside of Charles County to consider employment closer to home so that they can work and live within the same community.

The base has also been working on what they call "CITE" agreements – public-private partnership agreements where

private defense businesses specializing in the development of energetics can partner with the base, bringing a portion of their workforce to enhance the manufacturing capabilities on site.

With these CITE agreements, we also expect to attract an additional workforce. There's potential for individuals to move to Charles County or the broader Southern Maryland area in pursuit of these job opportunities.

That reminds me of when Naval Air Systems Command (NAVAIR) moved from Arlington, Virginia, to Patuxent River, Maryland, and defense contractors sprang up like mushrooms along Highway 235.

ROBERTSON-SLAGLE: Yes, NAVAIR transformed that whole corridor; they're still doing fantastic things down there. We expect a similar turnout along [Highway] 210, in what we call our "Western Charles County Technology Corridor." We are already receiving phone calls from contractors and interested parties who are aware of the business opportunities at the site. They are exploring real estate and potential redevelopment opportunities, preparing for when those contracts are awarded. It's an extremely exciting time for us.

Why is Charles County such a prime location for defense installations?

ROBERTSON-SLAGLE: Charles County is within a 40-minute drive of several key federal labs and military installations. We also offer easy access to major cities like Baltimore, Richmond, and Washington D.C., which includes proximity to government agencies, customers, and suppliers, and keeps defense and federal contracting firms on the cutting edge. We're sitting in what I call a "sweet spot." We developed a map that shows Charles County's proximity to Joint Base Andrews, Naval Air Systems Command in Pax River, Navy Support Facility Dahlgren [Virginia], and Indian Head, as well as

Washington, D.C. Charles County also maintains one of the highest percentages of engineers and doctoral scientists in Maryland and one of the highest percentages of engineers and doctoral scientists in the country.

Upskilling is essential for local companies to stay ahead of the marketplace. Our partnership with the College of Southern Maryland and its cutting-edge upskilling capabilities is invaluable. If a company needs to upskill its workforce to implement new technologies, it can tap into a resource pool like never before to develop custom curricula focused on skill enhancement. Every industry faces challenges with an aging workforce, and upskilling is crucial. With the pace of technology, we can't be competitive without it.

The College of Southern Maryland, a two-year community college, was formed almost 20 years ago by three individual colleges in Charles, Calvert and St. Mary's counties. This merger, aided by the three boards of county commissioners in Southern Maryland, was an extremely smart move, creating cutting-edge opportunities, better use of budget and opportunities to grow.

The college's Velocity Center, located just outside the base gate, partners with NSWC IHD. It provides a space where base officials can conduct training and host various events outside the gate, including machine shops, training classes, STEM events and diverse community activities in collaboration with the base. This setup allows personnel from Indian Head access to share industry best practices without jumping through a thousand hoops [the security protocols] to enter the base. That facility has turned out to be a fantastic asset for us, not just in Charles County but definitely for the base itself.

We also have great partnerships with the University of Maryland College Park, The Higher Education Center and many more. When it comes to the College of Southern Maryland, however, located right here in Charles County, you can't beat

the flexibility and the caliber of programs we can implement together.

On average, lease rates in Charles County offer companies about a 34% savings compared to other areas in the D.C. Metro area. We have affordable utilities, clean energy options and incentives to provide to industries considering Charles County. When we are approached by businesses interested in our county, our team can show them turnkey properties, although they must still navigate the regulatory review process for new construction. We are committed to keeping this inventory active and available for commercial businesses and industries looking to establish themselves here.

Winds Damage Navy TH-73 Training Helicopters at Whiting Field

By Richard Burgess, Senior Editor

ARLINGTON, Va. – A strong wind that swept through Naval Air Station Whiting Field caused damage more than three dozen new TH-73 Thrasher training helicopters earlier this month, according to a Navy spokesman.

The following statement was issued by the Commander, Naval Air Training Command (CNATRA):

“On May 13, at approximately 10:35 a.m. CST, a significant weather event involving high winds up to 71 knots (gusting) caused damage to 41 TH-73 Thrasher helicopters assigned to Training Air Wing (TAW) 5. No injury to personnel occurred during the incident and there has been no reported damage to any TH-57 Sea Ranger or T-6 Texan II aircraft positioned on the flight line. All aircraft were parked aboard Naval Air Station Whiting Field during the incident. The full extent of the resources needed to restore the fleet has not yet been finalized, however, repairs are not expected to exceed a month. No operational impact to the CNATRA mission is expected

due to the availability of CNATRA’s fleet of TH-57 Sea Ranger helicopters that remain undamaged.”

The TH-73A, built by Leonardo’s AgustaWestland Philadelphia Corp., is a military version of the Leonardo TH-119. The TH-73A was procured by the Navy to replace the Bell TH-57 Sea Ranger with the role of training rotary-wing and tilt-rotor pilots for the U.S. Navy, Marine Corps, and Coast Guard. The TH-73A was first delivered to TAW-5 in August 2021 and began training pilots in September 2022.

The Navy has ordered a total of 130 TH-73As. The Thrasher fleet is expected to complete replacement of the TH-57B/C during fiscal 2025 and serve through 2050, according to the Navy.