NPS, Defense Innovation Unit Sign MOU to Enhance Learning, Experimentation, Prototyping for Maritime Advantage

Retired Vice Adm. Ann Rondeau, president of the Naval Postgraduate School (NPS), and Doug Beck, director of the Defense Innovation Unit (DIU), are joined by senior Navy officials and NPS students after the signing of a Memorandum of Understanding (MOU) between the two institutions during the Sea-Air-Space conference in National Harbor, Md. The MOU will build upon past successes and existing academic and research relationships between DIU and NPS. *U.S. Navy | Lt. Cmdr. Ed Early*

The Naval Postgraduate School (NPS) and the Defense Innovation Unit (DIU) are joining forces in a cooperative endeavor to accelerate adoption of commercial dual-use technology solutions, while enhancing the advanced education of defense

leaders necessary to employ them.

DIU Director Doug Beck and retired U.S. Navy Vice Adm. Ann Rondeau, President of NPS, announced a new Memorandum of Understanding (MOU) on April 9 at the Sea-Air-Space Conference in National Harbor, Md. The MOU will build upon past successes and existing relationships between DIU and NPS to expand complementary efforts and future opportunities targeting education, research, and innovation through student fellowships at DIU, personnel exchanges, collaborative experimentation, and projects with the Naval Innovation Center (NIC) at NPS.

Said Secretary of the Navy Carlos Del Toro, who announced the establishment of the NIC at NPS in December 2022: “I look forward to witnessing the vision for the Naval Innovation Center coming to life at NPS. The NIC will provide an educational opportunity and venue unavailable anywhere else in the world, where industry and academic partners will work side-by-side with our NPS students to research and discover advanced warfighting solutions.”

Department of Defense (DOD) capabilities are built on American ingenuity and innovation. The recently published National Defense Science and Technology Strategy acknowledged the deep linkage of defense education and research to discovery and innovation, stating that “education is another cornerstone for building enduring advantage” and that DOD “cannot create 21st century capabilities using 20th century equipment, education, and employment policies.”

Increasingly, innovation is led by industry, and academic institutions are forging long-term relations with technology companies to stay on the cutting edge. This agreement will help to increase those relationships and deliver needed capabilities to the fleet and joint force.

“DIU partners with many Silicon Valley organizations, from

tech icons to start-ups as well as universities, and NPS is a natural fit given its defense focus," said Beck. "Through this partnership we will connect companies with NPS talent and technology leaders, providing a catalyst for their learning and applied research to deliver innovative solutions for the joint force."

For the Department of the Navy, the Naval Education Strategy guides and articulates the Secretary's vision "for naval education to develop the world's most capable, adaptive, and innovative naval force in support of the President's national security priorities and the National Defense Strategy (NDS)." With a technical, outcome-based focus, NPS graduate education meets naval-unique and national defense needs.

According to Chief of Naval Operations Adm. Lisa Franchetti, the new partnership with DIU will enhance the capabilities of NPS aligned with her top priorities.

"NPS develops warfighters who are able to translate today's uncertainties into tomorrow's strategies, and continuously create warfighting advantages," said Franchetti. "As the Navy's flagship technical graduate school, this DIU partnership will strengthen NPS' foundation to develop student excellence in their primary warfighting duties and further empower them to lead and solve real-world operational problems with leading-edge companies."

Established in 1909 at the U.S. Naval Academy in Annapolis, Md., NPS moved to Monterey, Calif. in 1951, attracting faculty talent with the rise of Silicon Valley. Faculty depth across multiple disciplines in defense-related fields such as cybersecurity, oceanography, physics, naval engineering and space systems remains a hallmark of NPS – and a core attribute for DIU's partners seeking to collaborate on defense research projects, experimentation and rapid prototyping.

"Our students are warrior-scholars, and they come to NPS to

learn and make a difference," said Rondeau. "NPS provides a venue to challenge assumptions, try new ideas, and with our industry partners, we serve as an innovation hub to rapidly adapt research concepts into prototype applications and capabilities. This new partnership with DIU will greatly enhance the impact our students can have on the fleet and force through expanded collaborations and greater access to emerging technologies."

Today, NPS is home to the Naval Innovation Center, established by the Secretary of the Navy in December 2022 to enhance the school's education, research and innovation impact. Del Toro is also championing a purposefully-designed building to house the NIC and fully leverage NPS attributes to support the innovation process at greater speed and scale.

The Defense Innovation Unit strengthens our national security by accelerating the adoption of leading commercial technology throughout the military and growing the national security innovation base. Learn more at: https://www.diu.mil/.

Sea-Air-Space Show Daily Coverage

Click each image to read daily coverage of #SAS24

MONDAY

SEAPOWER

The official publication of Sea-Air-Space

STEM Expo Brightens National Harbor with Exciting Science Demonstrations

By Brett Davis, Editor-in-Chief

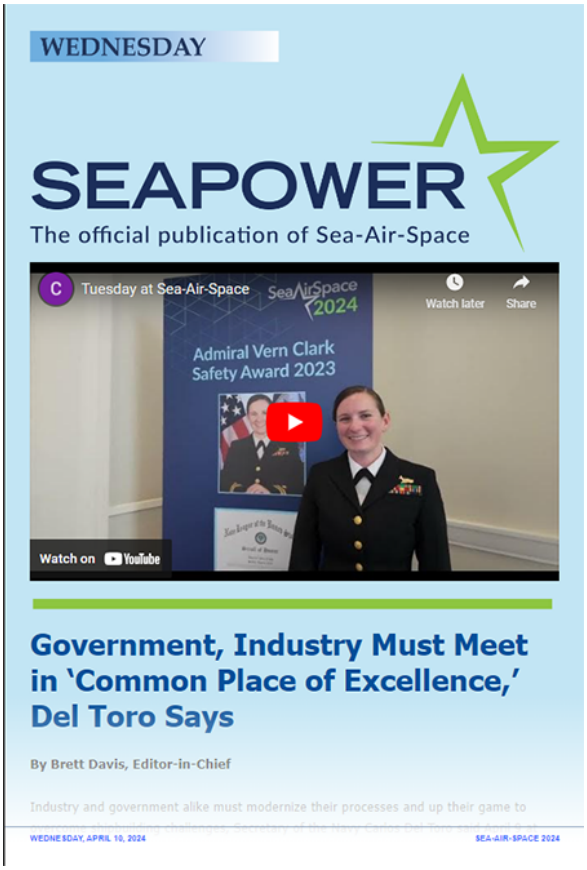
The STEM Expo brought 5th through 12th grade students face to face with exciting science concepts on Sunday, April 7, filling the Cherry Blossom ballroom with laughter and

TUESDAY

SEAPOWER

The official publication of Sea-Air-Space

Retention is Good but Workforce Challenges Remain, Service Chiefs Say



Sea-Air-Space 2024 Playlist

Visit Sea Air Space

Budget, Recruitment Challenges Drive Coast Guard Creativity, Officials Say

Coast Guard Commandant Admiral Linda Fagan speaks at the fifth annual Coast Guard breakfast. *Brett Davis*

Challenges with budgets, recruitment and retention levels are giving the U.S. Coast Guard the opportunity to be creative in addressing them and to update its policies and procedures, service officials said at the fifth annual Coast Guard Breakfast at Sea-Air-Space 2024.

Coast Guard Commandant Admiral Linda Fagan said the service has about half the maintenance budget it needs to maintain its legacy ships and equipment and is competing with the other services for shipbuilding and other industrial base services.

On the personnel side, persistent shortfalls in recruiting and retention the service is down about 10% for enlisted personnel, Fagan said have forced the Coast Guard to innovate and rethink the types of workers it recruits and how it enables their career.

“That crisis has really given us the opportunity to think,” Fagan said. “It strikes me the system that we’re operating,

and much like the other services, the boot camps and schools, they're optimized for 18 year olds fresh out of high school with little to no life experience, yet that's not the recruiting pool that we're experiencing or drawing into the service," Fagan said.

The service is moving to a vastly different recruitment method, bringing in people aged as much as "42 years young" with much more life experience, enabling much greater flexibility for service members with families and making it easier for guard members to leave the service and re-enter.

That's what enabled Rear Admiral Jo-Ann Burdian, the assistant commandant for response policy, to even be on stage on Wednesday at Sea-Air-Space, she said. She left active service as a lieutenant commander because she had three kids under the age of two at home.

"And when they were ready for me to come back, I still felt that calling back. I still felt like I had work to do for our Coast Guard and the nation, and the ability to come back and still go to graduate school, still compete for special assignments and be sitting here today" is a testament to the Coast Guard, she said.

Rear Admiral Russell Dash, commander of the Personnel Service Center, noted "we don't always do press releases when we change policy, but we were the first one that went to 42 years old to be able to join the Coast Guard," preceding the Navy's similar move.

Chief of Naval Operations Admiral Lisa Franchetti said on Monday at Sea-Air-Space that a parent and child could enter Navy service at the same time, one at 42 and one at 18, but Dash said the Coast Guard has actually had that happen.

He said the service's previous philosophies needed to change to make such things happen.

“There’s the acknowledgement that our standard of every single member of the Coast Guard needs to be worldwide deployable at every moment of their career, and the moment that you’re not worldwide deployable, we start a shot clock and say, you’ve got to fix yourself and get to this point, or we’re going to separate you. That’s wonderful when we had lines out the door, a waiting list to join the Coast Guard. But in the competition for talent, we’ve got to accept that’s not a standard that is maintainable for us. So, that has given us the opportunity to drive innovation.”

Rear Admiral Amy Grable makes a point about maintenance issues. *Brett Davis*

Maintenance

The service’s changes aren’t limited to personnel. To deal with that maintenance shortfall, the Coast Guard has gotten creative there as well.

“We do have shortfalls across all of our portfolios, including aviation, surface and shore,” said Rear Admiral Amy Grable,

assistant commandant for Engineering and Logistics.

“We’re deferring 50% of our maintenance on many of our major cutters. And what that means to our crews is, what we used to call cannibalizing parts from one cutter to put on another cutter. It’s now so routine that we have a name for it, we call it a controlled parts exchange,” she said.

HASC Members Prepare to Dive into Navy Budget

Members of the House Armed Services Committee seem prepared to overturn some Navy decisions as outlined in the fiscal 2025 budget request, including retiring some ships early and funding only one Virginia-class submarine.

“What has happened is, as the top line is increased, the game has become, ‘we’ll add a bunch of the stuff that we know Congress won’t add, and we’ll take out stuff that we know

Congress is going to put back in.' And that will be a net gain. That game has to stop," said Rep. Wittman (R-Virginia), chair of the House Subcommittee on Tactical Air and Land Forces.

As for the Virginia-class sub, Wittman said the Navy position that the program is behind anyway and the shipbuilders can't keep up doesn't make sense.

"It really is about demand signal and, and you can't have it both ways. You can't say, well, the reason we are reducing the submarine request is because we don't think the industrial base can do it. That's wrong," he said. "The industrial base can do it if you send them the demand signal. We're at about 1.6, I think, submarines today annually, we need to be at 2.3. The way we get there is to send the proper demand signal."

Rep. Joe Courtney (D-Connecticut), the ranking member on the Subcommittee on Seapower and Projection Forces, said a defense industry report issued in December highlighted the need for procurement stability.

"Procurement stability was the watchword throughout that report," he said. "And, we're sacrificing that. I mean, literally, within weeks" of the report.

Naval aviation is also an issue, as the Navy has an air attack shortfall, noted moderator Bryan Clark, a senior fellow at the Hudson Institute.

"There are some, thanks to Congress, some Super Hornets being procured in this year's appropriations," he said. "But there doesn't seem to be a clear path ahead for the carrier air wing."

This drew an animated response from Wittman, who said there doesn't seem to be a sense of urgency about the situation.

"The challenge now is to make sure we get enough F-35s in

production to be able to sustain these carrier wings," and to make sure there's not a "valley" as the Super Hornets retire, "where now all of a sudden you have aircraft carriers sitting at the dock because there's no aircraft on board. That means we have to get those lines to intersect. That's more of a challenge than what a lot of folks think because the tactical air component of that is about maintaining production."

The aircraft also need technical refresh three, an upgraded software capability that contractor Lockheed Martin warned will be delayed.

"I mean, there needs to be an all hands on deck mentality to go, no, that's not acceptable. We need these aircraft and now we're going to have hundreds of aircraft sitting on the tarmac waiting to get a software upgrade, right?"

Wittman continued, "F-35 is it, right? That's all we have, right? Let's get our fanny in gear and get this thing going and get it on the decks of the aircraft carriers, get it in the hands of our pilots in the Air Force. Get our fanny in gear. I mean, this is it. I hate to get fired up about it, but I'm fired up about it because this is the future of tactile air for this nation. Get our fanny in gear," he said, slapping the arms of his chair for emphasis.

Workforce Woes

The panel, which included Reps. Donald Norcross (D-New Jersey), Jen Kiggans (R-Virginia) and Ronny Jackson (R-Texas), also discussed the workforce issues plaguing the defense industry.

Kiggans, a former Navy helicopter pilot, said she sat on a HASC task force looking at recruitment and retention and what rose to the top were several issues: Compensation, housing and child care.

"That 5.2% pay raise that we just gave our servicemen and

women in the appropriations bills that were passed a couple weeks ago, that’s a good starting place, but there’s still more work to do,” Kiggans said.

As for housing, she said college dorms are better than the places junior enlisted Sailors and Marines are asked to live. “We have to do better for our junior Soldiers, Sailors and Airmen and Marines to be able to expect them to want to do the job that we ask,” she said.

On the pay issue, Wittman said, “this 5.2% increase this year was great, but remember, the lower you are on the salary scale, the percentage is not as quite as much in your paycheck. Take for example, if you come into our services, if you are a private in the Army, the Marine Corps, third-class Seamen, third-class Airman, your starting salary is $23,000 a year. That’s 11 dollars and 50 cents an hour asking you to do the most dangerous work of the nation, putting your life on the line. And guess what? You go to Chick-fil-A and serve chicken sandwiches and make more money in a much, much less challenging or dangerous environment. We have got to fix the junior enlisted salary differential.”

Government, Industry Must Meet in ‘Common Place of Excellence,’ Del Toro Says

Industry and government alike must modernize their processes and up their game to overcome shipbuilding challenges, Secretary of the Navy Carlos Del Toro said April 9 at the lunch session at Sea-Air-Space, including by working with shipbuilding partners overseas.

Del Toro began the speech with a bit of levity, bringing the U.S. Marine Corps mascot Chesty the bulldog onto the stage, before describing the challenges that face the nation, from Houthi rebel attacks in the Red Sea to the state of the nation's shipbuilding facilities and workforce.

"You have to understand, we, the nation, abandoned the shipbuilding industry and making the necessary investments in around the early 1980s," Del Toro said. "Because we thought that somehow the private sector would just take care of itself. And some ways it did. China moved in with cheap labor and labor practices that weren't fair. In fact, the United States is considering suing China for some of those unfair practices."

Incentives weren't made, and after the Cold War the nation lost many of it shipbuilders, he said, adding, "thank God" the

nation still has the shipbuilders it does.

“But the fact is, we need more capacity if we want to a grow a Navy fleet. Let me be clear, we need a bigger Navy fleet to meet the challenges of the future. We need to have the industry to be able to grow that capacity. So, this is a whole of government discussion that we’ve initiated in the Navy across the government and there’s a lot of interest that’s growing in many different places throughout government. And I think that you’ll see this actually continue,” he said.

Del Toro cited a recent visit to South Korea, where he saw what could be the future.

“Right now, we build the most capable warships in the world in shipyards that are sometimes decades behind the global technological standard. This is an inefficient approach requiring far too much time and taxpayer dollars. And it’s certainly an approach that is only inadequate to pace our 21st century competitors,” he said.

Japan and Korea, he noted, build high-quality ships “for a fraction of the cost that we do. When my team and I went to South Korea, we were floored at the level of digitization and real-time monitoring of shipbuilding progress with readily available information down to the individual pieces of stock materials. Their top executives can tell us to the day when ships would actually be delivered,” he said.

“It’s an ethos of commitment to constant improvement that is the foundation of their reputation, consistently delivering on time and on budget, even during COVID. The daunting challenges that we face are also an opportunity, a great opportunity to partner with a greater number of shipbuilders here in the U.S. and with our closest allies abroad. We have an opportunity to attract the most advanced shipbuilders in the world to work with our first-rate ship builders of the world … and invest in commercial shipyards here at home,” Del Toro said. “This will

allow us to modernize and expand our shipbuilding industrial capacity, creating good paying new-collar American jobs that come with a healthier and more competitive shipbuilding workforce."

Previous decades of investment are what have enabled the Navy to fight off the Houthi rebels as effectively as it has, Del Toro said.

"Ladies and gentlemen, sometimes I think the American people think that this is somehow commonplace to do this, as our CNO said the other day. There is absolutely nothing commonplace about this. Our United States Navy has been attacked. We have conducted strikes like we haven't seen in many ways since World War II."

He said investments in training have led to the successful engagements, along with the investments in the Aegis Combat System and the SPY-1 radar

"Those investments are the reason why our Sailors and Marines have been able to combat thethis with proficiency that they have demonstrated to win the fight of the future," he said.

The services must make similar investments today in robotics and other technologies. Del Toro noted the service has newly introduced the robotics warfare specialist rating. The RW "will be the subject matter expert for computer vision, mission, autonomy, navigation, autonomy, data systems, artificial intelligence and machine learning," he said, calling it a "significant milestone in our journey towards achieving a truly hybrid fleet."

And, he said again, the nation needs to investment in shipbuilding.

"The findings of the 45-day comprehensive shipbuilding review have underscored too many of our industrial partners are behind schedule and over budget on our highest priority

programs. Let’s be clear, I want American industry to thrive, as a business owner for almost two decades. I understand your perspective. I’m pushing our shipbuilding industry to invest in itself to get better, be technological leaders and to once again deliver platforms on time and on budget. We must deliver for the American people because it’s our line of work. We don’t get to make excuses,” he said.

“Of course, there’s work for us to do on our end and the government as well. I’m determined to address the longstanding challenges in our procurement processes that cause industry heartburn as they tried to do business with us. And there are many that we have to work through. I expect our leaders in the government to foster culture of excellence and accountability across our own acquisition workforce.

“The point is this,” Del Toro said. “Just as our country needs you and industry to be at the top of your game, I’m determined to ensure that we and the Department of the Navy are also on the top of our game. We must meet industry in a common place of excellence.”

Additive Manufacturing, Small Business Collaboration Highlight First Day of Sea-Air-Space 2024

By NAVAIR

Naval Air Systems Command (NAVAIR) kicked off the 2024 Sea-Air-Space Expo on Monday with panel discussions on

manned/unmanned and weapon systems advancements, additive manufacturing success stories and collaborative opportunities for small businesses to join with NAVAIR to aid the warfighter.

The first panel was led by Rear Admiral Stephen Tedford, executive officer of the Program Executive Office for Unmanned Aviation and Strike Weapons (see Tuesday's Show Daily for a story on his presentation).

Theodore Gronda, program manager for the NAVAIR Additive Manufacturing (AM) Team, began his panel discussion by highlighting that the AM team was established in order to create parts in small quantities, when needed, to get a grounded aircraft back in service in a faster time than relying on industry partners for supply chain gaps. Additive Manufacturing is the ability to "print" an object based on information fed into a device, much like a 3D printer.

Gronda said NAVAIR began supporting AM developments by separating them into three tiers. Tier 1 AM printers focus on "Commodity Polymers," and is responsible for creating non-critical, smaller items such as knobs, clips and caps. Tier 2 AM printers focus on "Industrial Polymers," including non-critical and critical parts such as tools, covers, brackets and mounts. Tier 3 AM printers are "Industrial Metal" and create non-critical and critical metal parts including valve bodies, gearboxes, fuel and engine components and manifolds.

One of the newer capabilities Gronda announced was the addition of a "Solid State" cold spray technology, which uses a metal powder to spray and build up or repair a designated item.

Currently, there are 96 AM devices deployed to 33 sites, including deployed aircraft carriers.

A recent victory for the AM team's capabilities was when they received word that a ship's optical landing system had failed.

There were aircraft aboard the ship that depended upon that critical landing system and were unable to fly. The ship contacted the AM team and they got to work, learning that the damaged part was simply a coupler, no bigger than four quarters. Within 12 hours, the team was able to redesign the coupler, test it, receive approval, and send the coupler data electronically to the ship where it was then printed. As they were about to install the part, the ship received orders to deploy and the repair was put on hold for a few hours to enable the ship to transit to its destination. Once it arrived, the coupler was installed, and aircraft from that ship were deployed to intercept UASs that were targeting allies.

Another victory for the team, several E-6B Mercury customers found themselves in need of fuel cell interconnecting fittings replacements, as the previous vendor for the part went under during the Covid-19 pandemic. The AM team received a call in October, requesting 12 replacements for the fuel cell interconnectors. Within four months, the team was able to produce the parts and get them to the customers.

Gronda stressed that this was just one example of how the pandemic affected the Naval Supply Systems Command (NAVSUP) ability to maintain sustainment capabilities and how the AM team is rising to meet those areas impacted by supply chain gaps created by the pandemic.

Recognizing the increasing need of AM implementations, Gronda said the Naval Aviation Schoolhouse for Additive Manufacturing was established in February in Danville, Virginia, and will aim to create a pipeline of AM artisans to meet growing AM needs. The Schoolhouse is a collaborative effort with Naval Sea Systems Command (NAVSEA).

Another success story related to the team was the ability to repair tire rim assemblies on F/A-18 Hornets. Gronda said pilots often land hard on carrier decks, causing the landing

gear wheel hub to oblong and the tire to shake. If the tire shakes, it is taken off and discarded.

“That tire is wildly expensive,” Gronda said. “There wasn’t an effective way to repair it. We go through 166 of these tires a year and they cost six figures apiece. Eighty percent of those tires are repairable with cold spray technology. It takes me two hours and costs $300. It’s a big deal for us. And what that’s done is taught us to think different. Stuff that we previously thought was not repairable is repairable now with cool spray and our additive manufacturing repair machines.”

Small Business Opportunities

The final panel of the day began with an overview of the NAVAIR Office of Small Business Programs (OSBP) and how collaborations with modestly sized operations can be mutually beneficial.

The panel gave step-by-step guidance in how the team guides prospective partners through meeting with OSBP, specifically directing them to the OSBP website, https://www.navair.navy.mil/osbp/.

Irma Alexander, deputy director for the OSBP, summed up whole purpose attendees were at Sea-Air-Space this week – market research.

“The government is here to learn about you. You’re here to learn about us, about your competitors, about potential future collaborations,” Alexander said. “But how do you make those decisions? You make them through market research. That’s our common purpose. So, when you go home and you’re tired, think about the motivation you felt this morning, because that’s the motivation you need to go do your homework so you can come see us. Market research is the foundation from where you build your business decisions, where you decide how you’re going to capture that business, and how you’re going to mark it. The good news is we offer a lot of awesome market research

resources.”

AUKUS Program Marks ‘Greatest Industrial Undertaking’ for Australia

Then-CNO Admiral Mike Gilday, Royal Navy First Sea Lord and Chief of Naval Staff Adm. Sir Ben Key, and Chief of the Royal Australian Navy Vice Adm. Mark Hammond, tour the Virginia-class fast-attack submarine USS Missouri following the AUKUS bilateral announcement in San Diego, Calif, March 13, 2023. CREDIT: U.S. Navy | Commander Courtney Hillson

The AUKUS program, the multination effort to provide Australia with nuclear-powered submarines, will kick-start that

country’s ability to build nuclear subs, an Australian minister said in a panel discussion at Sea-Air-Space on April 8.

Pat Conroy, Australia’s minister for defense industry and minister for international development and the Pacific, said the effort will be a challenge but it was a logical choice to select a partnership of Australian Submarine Corp. and BAE Systems to build the subs, as ASC built Australia’s diesel-electric submarines and BAE builds the United Kingdom’s Astute and Dreadnought-class submarines.

“For them to form a joint venture for us was the right model,” Conroy said. He said it will be a “step up” for them to move to nuclear standards, but they’ve had a long partnership with General Dynamics Electric Boat in the United States.

“Electric Boat was instrument in fixing some of the challenges that we encountered earlier in the Collins class,” Conroy said. “So, we’re confident we’ll put the ecosystem in and we’re investing around $30 billion Australia to increase our industrial place uplift that will really underpin what is the greatest industrial undertaking our country’s ever attempted.”

Moderator Megan Eckstein of Defense News noted the United States and United Kingdom are talking about building up the nuclear industrial base, but for Australia, “you’re starting from scratch.”

Conroy replied, “it’s an incredible effort, and lots of progress has been made from legislative rules to establishing a nuclear regulatory authority to starting to train our workers, our industry in the nuclear mindset. It has been a challenge, but also a great opportunity to include Australian companies from the ground floor.”

Australia is mounting a full national mobilization, he said, including funding 4,000 additional permanent university places

in STEM subjects to grow the workforce.

“We think we need 20,000 workers. We’ve got Royal Australian Navy sailors working on U.S. submarine tenders in Guam right now, and a hundred ASC employees will be working for harbor sustainment next year,” he said.

“So, we’re starting that training pipeline. That $30 billion dollars will be a massive investment. And while it’s a challenge, there’s also opportunities,” he said.

“I’ve had the privilege of going through Barrow-in-Furness in the U.K. [home of BAE Systems Submarines] and the Groton, Connecticut yard here [home of Electric Boat] and they’ve got tremendous expertise built up over a century. But they’ve also got the challenges of that, of being built around towns like in Barrow-in-Furness. You’ve got terrace houses next to assembly halls because the town and a shipyard being built up together. Having a brownfield site where we can build with the best equipment, with lots of open space, will really allow us to maximize efficiencies and learnings from our oldest partners.”

Atlantic Commander: Industry-Government Partnership Essential to Coast Guard Innovation

U.S. Coast Guard response boat crews enforce a safety zone, April 2, 2024, after the collapse of the Francis Scott Key Bridge in Baltimore, Maryland.

By Erika Fitzpatrick, Contributor

Future innovation within the U.S. Coast Guard comes from listening to and partnering with the defense industry, Vice Admiral Kevin E. Lunday, U.S. Coast Guard Commander of the Atlantic Area and Defense Force East, said April 8 at Sea-Air-Space 2024.

“Most of the innovation, most of the great ideas – the kernel, the incubator for those – is within the defense industrial base,” he said. The Navy League’s symposium, which he called the premiere industry-government event, is a “special opportunity to have a conversation and a dialogue.”

In addition to supporting U.S. Combatant Commands, Lunday directs Coast Guard forces and operations involving navigable waterways east of the Rocky Mountains to the East Coast, throughout the Atlantic Ocean, and in parts of the Arctic

Ocean to the Arabian Gulf.

As such, his command is involved in a range of often high-profile events and issues.

For instance, when Baltimore's Francis Scott Key bridge collapsed on March 26 within minutes of being rammed by a massive, malfunctioning container ship, Lunday directed forces there within hours for active search and rescue and follow-on recovery efforts. In cooperation with federal, state, and local partners, the USCG set up and now helps lead the Key Bridge Response Unified Command.

"While that may seem like a very unusual operation in some respects – a bridge collapse after a ship hitting it – that kind of emergency response that the Coast Guard is involved in leading is very common for what we do across the Atlantic area, across the service, every day," he said.

Other Atlantic-area USCG operations include:

- Helping prevent and prepare for maritime mass migration incidents and fighting transnational crime in the eastern Caribbean through participation in the Joint Task Force-East.

- Controlling, reducing, and preventing deaths from irregular maritime migration, particularly in stemming the flow of migrants from the economically and politically stressed countries of Haiti and Cuba, through Homeland Security Task Force-Southeast.

- Looking into the circumstances involved in the June 2023 implosion of the Titan submersible, an ongoing review conducted by the Coast Guard Marine Board of Investigation.

Lunday credited USCG's successful involvement in these and other endeavors to long-term investments in incident command response and in technological systems that shed light on maritime migration patterns and provide other mission-critical information.

Need to Think Differently

Lunday said USCG is intently focused on readiness – how to carefully balance the readiness of the force with the demand for execution.

However, he said, new solutions are needed, and the Coast Guard looks to private industry to provide many of them.

Our leadership challenges us is to "think differently about how we conduct operations," Lunday said, "because the increased demands for services and readiness challenges are forcing us to think differently."

For instance, the Coast Guard needs effective technologies with government and mission application. These include artificial intelligence and data tools to better analyze, understand, model, and predict patterns of human behavior.

Because industry is thinking about where we need to be going, Lunday said, we should "open our mind and our ears and listen to what they're saying about how we move forward."

CMS Breakfast: Pursuing Ways to Strengthen the Workforce,

Boost Readiness

Government and industry need to work together to solve the problems of shipbuilding schedules, workforce retention and getting deployable technology into the hands of warfighters at scale, speakers said at the Center for Maritime Strategy breakfast on April 9.

“Is it time to call for the Defense Production Act?” asked Admiral James Foggo, the dean of CMS and panel moderator, noting the number of shipyards have declined over the decades from 55 to just six today.

“It’s about setting conditions,” said Nickolas Guertin, the Navy’s relatively new assistant secretary for research, development and acquisition, noting the industry saw the need to ramp up shipbuilding in the 1930s, providing critical capability when World War II began. “Setting conditions is part of what I can do.”

Guertin said defense officials and industry need to stop thinking of themselves as carrier people or submarine people, "but as delivering game-changing capability across the tyranny of distance."

He said government and industry need to look at the workforce as national strategic assets and create environments where they want to stay in an industry adversely affected by COVID.

"Their happiness at work is a primary task for industry … we are bleeding people on the waterfront and we need to turn that around," he said.

Admiral Daryl Caudle, commander of Fleet Forces Command, said it has become obvious to Chief of Naval Operations Admiral Lisa Franchetti that the Navy she has inherited "will not fundamentally change in size. It just will not. We have a responsibility to wring out every ounce of readiness we can."

The Navy needs to innovate on force generation, defining what combat surge readiness looks like, and coupling revolutionary technology like artificial intelligence and machine learning with actual problems they can help solve, "so we can actually apply [them] where those technologies need to land," he said.

It would also be helpful to give industry clear demand signals through clear requirements and multi-year procurements, Caudle said, and the service must turn concepts of operations into concepts of deployment. "How do I get this into the theater?"

DIU Evolution

That is one of the jobs of DIU, the Defense Innovation Unit directed by Doug Beck, recruited by the late secretary of defense Ash Carter, who Beck said was prescient about the direction industry was going and realized "we must leverage the incredible technology in our commercial tech sector," Beck said.

“What he saw was that in so many areas of technology — artificial intelligence, autonomy, biotech, space, cyber — those areas of technology are going faster in order to meet the relentless demands of billions of consumers around the world,” much faster than “they possibly could in our bespoke only” defense market.

The nation is now at a tipping point, he said, where the president, secretary of defense, commercial tech sector and Congress all “get it” and need to move that technology to the field. DIU’s first iteration was building a bridge to the tech sector, version 2.0 was proving that commercial technology could help solve military problems and the latest version, call it DIU 3.0, is aimed applying technology “with strategic effect,” and doing so at scale.

One such effort is Replicator, a Department of Defense effort to field thousands of attritable, autonomous, uncrewed systems to counter China’s growing naval capability. The initial effort is about creating the capability and then doing that “over and over again,” Beck said. “We are on track for both of those objectives.”

He said he couldn’t talk about actual systems that are part of the effort, but said tranche 1 is “off to the races” and they are working on tranche 2, with a deadline of August 2025.

Columbia Status

Matthew Sermon, the executive director, PEO Strategic Submarines, addressed the Columbia-class submarine program, identified as being well behind schedule, according to a Navy shipbuilding review.

“Columbia is becoming a ship,” with the lead ship is under construction, stable requirements and a mature design, he said. However, it has experienced “lead ship challenges,” which he said could be expected in the first ship designed entirely in a 3D model.

“We’re not going to surrender that lead ship schedule,” he said, and the program is moving to match the production cadence required by the Navy.

Speaking of innovative technology, he said additive manufacturing is entering the workforce, although it may not be as widely distributed as previously thought.

“We have narrowed that down to six critical materials” and the related parts, he said. “We’re going to prove it out, we’re going to destructively test it … we’re going to get it right.”

Ursa Major Signs Contract with US Navy for Next Gen Solid Rocket Motors for Standard Missile

PHILIPPINE SEA (April 5, 2024) The Arleigh Burke-class guided-missile destroyer USS Higgins (DDG 76) launches a Standard Missile (SM) 2 from a forward launcher while operating in the Philippine Sea, April 5, 2024. (USN photo by MC1 Hannah Fry)

DENVER, April 8, 2024 – Ursa Major, America's leading privately funded company focused solely on propulsion, announced a contract today with the Naval Energetics Systems and Technologies (NEST) Program to develop and hot fire test a prototype solid rocket motor (SRM) for the U.S. Navy's Standard Missile (SM) program. Under this contract, Ursa Major will develop a new design and apply the company's revolutionary manufacturing process to the Navy's workhorse Mk 104 dual-thrust rocket motor in coordination with the Navy's Program Executive Office Integrated Warfare Systems 3.0, Naval Air Warfare Center – Weapons Division at China Lake, and the Naval Surface Warfare Center at Indian Head.

The Mk 104 SRM powers the Navy's SM arsenal, including the SM-2, used for surface-to-air defense; the SM-3, used for ballistic missile defense; and the SM-6, an anti-air, land, and sea missile. In 2022, the Missile Defense Agency stated

that the SM-6 is the only missile capable of intercepting maneuverable hypersonic missiles. While the Mk 104 is a high-performance motor, legacy models are challenging to manufacture. Using the company's cutting-edge Lynx production process for SRMs, Ursa Major will leverage additive manufacturing to design a high-performing motor built for manufacturability and reliability.

"We are proud of the Navy's support and recognition of Ursa Major as a trusted partner to develop the next generation of Mk 104 solid rocket motors," said Ursa Major founder and CEO Joe Laurienti. "Our new approach to manufacturing SRMs allows Ursa Major to quickly develop high-performing motors at scale, driving volume and cost efficiencies to address this critical national need."

"PEO IWS is excited to work with Ursa Major on this effort to bolster a critical component of the Nation's industrial base," said Captain Thomas Seigenthaler, the director of PEO IWS 3.0. "The production of solid rocket motors is a top priority, and we are impressed with Ursa Major's innovative approach to address manufacturing challenges."

Lynx, Ursa Major's innovative new approach to designing and manufacturing SRMs, was introduced in November 2023. The manufacturing process uses additive manufacturing and a product-agnostic tooling system to rapidly produce scalable SRM systems without expensive or time-consuming re-tooling or re-training. Learn more here.