

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.”

Future Challenges May Involve Rethinking How the U.S. Fights, Speakers Say



Amiral James Kilby, the Vice Chief of Naval Operations, speaks at the luncheon panel on Monday.

The United States is facing a variety of challenges, from Houthi rebels in the Red Sea to the People's Republic of China, but the preferred American way of fighting – massive overmatch – may not be tenable for the future, two panelists said during the luncheon event at the opening day of Sea-Air-Space.

China is investing in its military faster than the U.S. is, and the new U.S. defense budget is a 1% increase in the top line, which amounts to a decrease with inflation, said retired Admiral James "Sandy" Winnefeld, chair of the President's Intelligence Committee.

"Even if we could build the ships that we wanted to build, we would have trouble maintaining them all," he said. "And then manning is a challenge for us. So, it's entirely possible that the means that we want to apply to this problem ... are not going to be there."

What the nation may need to do is adopt a “whole of nation approach, not just a military-on-military approach, which involves diplomacy, economics, information, and of course the military,” he said.

Vice Chief of Naval Operations Admiral James Kilby said one way forward is with disruptive technology, the sort being developed by the Disruptive Capabilities Office, the group set up last fall by Secretary of the Navy Carlos Del Toro to more quickly move technology to the field.

He wouldn't go into specifics of what the office is working on, but it's intended to look at a broad swatch of technology and see what can be tested and moved rapidly to the warfighter.

“The Disruptive Capabilities Office is meant to look across the whole DoD spectrum and understand what can be brought to bear quickly and to put that together in a test environment, test it, and have some confidence in it before we go after it,” he said.

“... That is different behavior than how we're used to doing it, and it's basically capability focused,” he said. It builds on the work of Task Force 59, which deployed maritime unmanned systems, and is aimed at ways to “produce some capability now versus the perfect in future,” he said.

**Retention is Good but
Workforce Challenges Remain,**

Service Chiefs Say



Navy CNO Admiral Lisa Franchetti speaks at the opening session of Sea-Air-Space 2024

Retention in the Navy and Marine Corps is going well, but recruitment remains a challenge across the services, including the Maritime Administration, and the services must set priorities in a time of great challenges and tight budgets, sea service chiefs said in the kickoff keynote panel of Sea-Air-Space 2024.

Undersecretary of the Navy Erik Raven, who introduced the panel, asked what is needed to continue U.S. dominance. "We need budgets to support our strategy, with people and readiness coming first," he said.

He noted the fiscal 2025 Navy budget request involves “some tough choices, putting quality of service and readiness at the top of the priority list means other program must either must make do or take risks.”

But the proposed budget “boldly advances our undersea capabilities for both U.S. and AUKUS demands, solidifies our commitment to 31 amphibious ships, and advances the landing ship medium into production,” he said.

The panelists then took up the issue of budgets and the challenges facing the services. Chief of Naval Operations Admiral Lisa Franchetti said the service has only a .7% increase in its budget in the fiscal 2025 request, forcing it to set priorities.

Number one is the Columbia-class submarine program, next is near-term readiness in “our forces and our people,” and next is working with industry partners to make that happen.

“You can see the demand signal: 88 ships under contract, 66 under construction ... we know we need a larger Navy, every study since 2016 has shown that,” she said. “I think the most effective way to work on that right now is invest in our industrial base, invest in the workforce, invest alongside our industry partners in the infrastructure necessary to really set the conditions to speed up the production and the throughput of the ships and submarines that we need to put more players on the field.”



General Chris Mahoney, the assistant commandant of the Marine Corps.

General Chris Mahoney, the assistant commandant of the Marine Corps, said the fiscal '25 budget funds the LPDs, LHAs and LSMs the service needs, so “for what allows us to be ready, the 25 program right now is looking very strong.”

Admiral Linda Fagan, commandant of the Coast Guard, said “demand for the Coast Guard is deafening and it’s worldwide,” from dealing with the aftermath of the collapsed bridge in Baltimore to working with small nations that need the presence of cutters to help defend their interests.

She noted there is great Coast Guard demand for new ships as well.

“We, too, are in the largest acquisition that we’ve had since

World War II. We compete for the same industrial base space, both new construction and repair with the Navy. And it's critical for the nation that we've got that kind of reliable access and commitment to the new ship capacity and then repair capacity and maintenance capacity for the ships that are operating."

The Maritime Administration, too, is building new ships, albeit on a much smaller scale, said MARAD Administrator Ann Phillips. Its new builds, five new training ships, are for the Merchant Marine academies.



Admiral Linda Fagan, commandant of the U.S. Coast Guard.

"We thank Congress for the funding to be able to build these vessels, but when you have a 100% design, when you have firm

fixed-price contracts, when you have by law a very small change order budget, and you have commercial best practices being applied, you are able to move through this vessel construction and vessel procurement,” Phillips said. “We’re on budget. We’re nearly on time.”

Retention and Recruitment

Of course, having ships is one thing, but the services must be able to crew them and maintain them, which are challenges of their own.

“I’m happy to say that retention is very good in the Navy right now in almost all of our fields. And so, to me, that’s a signal that people are really committed to our mission,” Franchetti said.

The service is “very focused” on recruiting, she said. “We can have all the best platforms in the world, but if we don’t have the warfighters that can deploy them, we’re not going to be an effective Navy,” she said. “So, we’re focused hard on recruiting,” including by elevating the head of Navy recruiting to a two-star admiral.

The Navy is also “expanding the pool of folks that can join our Navy team,” including by boosting the age of enlistment to 42. “If anybody out there is not turned 42 yet, there should be some recruiters around who are going to sign you up,” she said. “And if your kid is above 18, you and your kid can be enlisted simultaneously.”

The Coast Guard has had a shortfall as well, Fagan said, but has “kind of recovered” and is looking to recruit more effectively as well, including by boosting its recruiting capacity by nearly 25% and going after young people where they are, including standing up junior ROTC programs and even going on Twitch.

“It’s an online collaborative gaming site, which,

surprisingly, there were a lot of 20-year-olds,” she joked. “There’s the target audience.”

Mahoney said retention numbers in the Marine Corps are “very, very good. We’ve made mission, we will make mission this year. You heard here first, our attention numbers are good and getting better, but it’s not a condition of stasis. You don’t declare victory and walk on to the next issue.”

The Marines must look at the factors that make and keep young men and women Marines, “and that equates to their conditions of the barracks, access to healthcare, access to childcare, good childcare, good gyms. And you’ve got to bring in new ideas to continually, not sit there and declare victory once again, but to make sure that you are addressing needs that they have,” Mahoney said.

**Lockheed Martin Advances
Aegis Weapon System
Coordination with Two Missile
Systems**



Lockheed Martin (Booth 1001) recently completed a successful Flight Test Aegis Weapon System-32 using the combat system to intercept a medium-range ballistic missile target using the Standard Missile-6 Dual II software upgrade.

The test, supported by the Missile Defense Agency, U.S. Navy, and Lockheed Martin, tested a real-world scenario and proved the versatility and strength of the Aegis Combat System, showing the latest weapon system configuration can defeat this class of threat working with the SM-6.

“We rapidly advance and integrate our technologies to ensure the U.S. Navy has the capabilities its Sailors need to meet their toughest missions today and tomorrow,” said Amr Hussein, vice president and general manager of multi-domain combat solutions at Lockheed Martin Rotary and Mission Systems. “This flight test utilized the latest updates to Aegis Baseline 9, which improves tracking, identification and intercept capabilities to solve for evolving, complex threats.”

Lockheed Martin is the Combat System Engineering Agent (CSEA),

responsible for the design, development, integration and test of the weapon system that successfully planned, searched, tracked, and conducted the engagement of the target, including launching and guiding the SM-6 intercept.

In response to written questions from Seapower, the company said the effort tested its latest designs as it continue to evolve and improve the system to defeat ever evolving and challenging threats.

The company has already integrated more than 60 into the Aegist Combat System, including a range of effectors and sensors, both domestically and for six international allies.

PAC Test

The company also investing in technology enhancements to integrate PAC-3 Missile Segment Enhancement (MSE) into the MK 41 Vertical Launching System to support employment with the Aegis Weapon System.

This integration would deliver a hardened defense to maritime fleets using an existing, well-tested interceptor to defends against threats including tactical ballistic missiles, cruise missiles and aircraft.

The company plans to participate in a live-fire event this year, although events are still largely under wraps. Last year, the company participated in an S-Band radio test which simulated the radio that Standard Missiles and others use to get midcourse guidance.

“That was a successful test, so all of the major lab-based, shore-based tests without doing a live fire have been successfully completed,” Tom Copeman, vice president of naval systems and strategy for Lockheed Missiles and Fire Control, told Seapower in an interview. “... All prepping for a live-fire event which is scheduled for 2024.”

The Aegis Combat System has a long and successful record, and the PAC-3 has a lengthy pedigree as well, “so we’re confident that the marriage of these two very, very mature systems will yield a much-improved capability for the United States Navy if they choose to move forward with it,” Copeman said.

The number of Aegis Weapon Systems and PAC-3 missiles could lead to a somewhat widespread use in the fleet should the Navy choose to go that route, and Copeman said “we’ll continue to internally invest to keep the project moving, so if they do decide to go, it could be fairly rapidly implemented if the Navy says they want to do it.”

“Think about the capacity that will enable, which is really a huge capability that we can give the U.S. Navy,” Hussein said.

Naval Supply Systems Command introduces Naval Sustainment System- Supply 2.0



The guided-missile destroyer USS Arleigh Burke (DDG 51) transits through the Mediterranean Sea in 2023. NSS-Supply is helping meet fleet readiness goals using an agile framework driven by data analytics. [CREDIT: U.S. Navy | Mass Communication Specialist 2nd Class Omar Rubi](#)

By Kirk Engler and Melissa Olson

Naval Sustainment System-Supply (NSS-Supply) 2.0 is focused on delivering fleet outcomes and supply's contribution to fleet readiness, whereas NSS-Supply's original focus was to capture supply chain value.

Navy fleet readiness goals fall into three categories: Subsurface, Surface, and Aviation, allowing NAVSUP to focus on supply's contribution to meeting fleet readiness goals.

How? NSS-Supply uses the "Agile" framework driven by data analytics. NSS-Supply is currently analyzing data to see what supplies are keeping the Surface Warfare community from reaching their North Star readiness target of 75 mission capable ships. A good example is the targeting of on-board sparing for systems that have outdated spares modeling.

Getting the right mix of spares on board increases readiness and improves endurance.

Simply stated, NSS-Supply 2.0 moves away from a monetized-value calculation to a readiness calculation directly linked to fleet readiness goals.

NSS-Supply is built on the CNO's priorities of warfighting, warfighters, and the foundation that supports them. The essential element is the Agile approach which quickly assesses problem areas and rapidly deploys innovation into the E2E supply chain using the Get Real, Get Better mindset to deep-dive supply chain issues that accelerate the Navy's warfighting advantage.

Initiatives are built from the Chief of Naval Operations, Navigation Plan Implementation Framework (NIF) priorities and objectives. Additionally, Performance-to-Plan (P2P) is inculcated in the NSS-Supply culture to drive baseline Get Real readiness performance and NSS-Supply is the Get Better engine that allows accountable commanders to implement world-class readiness solutions across the Navy's E2E supply chain.

NSS-Supply has undertaken 33 initiatives since 2021. The following examples provide a few highlights:

- Achieved average RTAT reduction of 40% in aviation and 30% in maritime repairs.
- Established first Regional Maintenance Center reoccurring repair agreements to repair 104 parts for wholesale stocking.
- Increased nuclear submarine capabilities through improved spares pool health and enhanced policies to increase critical submarine parts inventories.
- Engaged key suppliers to improve contract performance, expanded contract strategies, and improved inventory performance.

- Built and implemented E2E Naval Shipyard Supply Chain Management tool to significantly improve submarine material support.

NSS-Supply continues to tackle supply chain initiatives directly supporting the warfighter as a multi-year journey to transform the end-to-end supply chain and provide the sustainment outcome the fleet needs that responds to the VCNO directive that designated the Commander, Naval Supply Systems Command as the Navy's E2E Navy Supply Chain Integrator.

CDR Kirk Engler is director of Naval Sustainment System – Supply, Naval Supply Systems Command and Melissa Olson is deputy director.

L3Harris Moves Ahead with Disruptive Capabilities



L3Harris successfully launched and recovered a Iver4 UUV from a submarine. Photo Credit: L3Harris

L3Harris (Booth 1037) hopes to use its expertise in autonomy software, uncrewed surface vessels and uncrewed underwater systems to help the Navy counter the looming threat of China and get more systems into service.

The company has a lot of interest in what Jon Rambeau, president of L3Harris' Integrated Mission Systems segment, called "disruptive capabilities," which includes moving airborne ISR capabilities from military aircraft to business jets and focusing on passive sensing and targeting for autonomous surface and subsurface vehicles.

"In the maritime domain ... [we do] a lot of work around autonomous surface and subsurface vessels, and also a focus on passive sensing and targeting for the surface to allow the manned fleet to operate without having to light up their radars so often," Rambeau told Seapower in an interview. "We think that's a capability that can be deployed very rapidly, it's very mature and it's also very low cost."

The company also recently successfully deployed and recovered an uncrewed underwater vessel from a submarine's torpedo tube, using one of its Iver4 vehicles.

"We were the first company to be able to demonstrate the capability to retrieve a UUV through a submarine torpedo tube while it was underway," Rambeau said. "A pretty big accomplishment. Others had tried and failed and we were able to be successful on our first try, which was pretty impressive and not only that, but twice in one day, so pretty neat. That team just won our corporation's top technology innovation award this year across the entire company."

Replicator

The U.S. Department of Defense last year announced the Replicator program, a still largely undefined effort to launch

thousands of attritable, autonomous aerial and surface systems to help counter China's growing fleet.

"That's something we're very interested in being a part of," Rambeau said. "I think some of those decisions are still being made about who and how we'll participate, but we know there's an initiative, obviously, to drive the large-scale deployment of unmanned systems, and we think the work we do is right in the heart of that. We've deployed hundreds of small, undersea vessels, we've deployed hundreds of small surface vessels over a number of years, some in the commercial side, some in the military side of our business, and that's where a lot of our concentration has been, small and medium vessels for subsurface and surface operations, and a lot of work particularly around the autonomy capability."

L3Harris has an in-house autonomy development team, a capability Rambeau said is very mature, and had two autonomous ships deployed under an urgent operational needs statement with Task Force 59 out of Bahrain, which has been demonstrating uncrewed surface vessel capabilities. The submarine-launched UUV effort also stemmed from an urgent needs requirement.

"One of the areas that we continue to focus on is that we know the customer pull is there for these, I would say disruptive capabilities, we have the technology well matured," Rambeau said. "I think the question is, how do we quickly get from proof of concept to prototyping to production as fast as possible? Initiatives like Replicator are designed to try to move that along, and we're hopeful that there will be opportunities for us to be part of that."

Passive Sensing

Some of the passive sensing and targeting capabilities the company has developed for uncrewed systems can also be deployed on manned vessels, and L3Harris is planning to do

some prototyping work with the Navy on that later this year.

“We’re still working through the details of how and where and when that will take place,” Rambeau said, “but we are looking to prove out the ability to sense and target an adversary without having to use a radar onboard a ship at all. That is our hope.”

Rambeau said he is seeing growing interest from the military in manned-unmanned teaming, a concept that has been around for years but which could gain new potency under a Replicator-type effort.

“I won’t speak for the Navy, but from my point of view I think that being able to link a small group of unmanned surface vessels with the manned fleet and allow those to be companions to get out ahead a little bit, do some reconnaissance, feed information back, there certainly are a lot of opportunities to employ the vessels in that way,” he said.

“... With the ability now to launch and recover an unmanned vessel from a submarine, that really gives an opportunity to extend the reach of the submarine fleet and also to provide greater survivability, because they may not have to go into harm’s way as deeply to gather data if they have an appendage that can be set free and then recovered back with some information. Minehunting, that sort of thing.”

**Insitu Going Strong at 30,
Focusing on Maritime**

Operations



Insitu's FLARES system carries an Integrator SUAS aloft to launch it. Photo Credit: Insitu

By Richard R. Burgess, Senior Editor

NATIONAL HARBOR, Md. – Insitu, one of the most experienced companies in the small unmanned aerial systems (SUAS) market, will mark 30 years of operations in May.

The company (in parent company Boeing's Booth 1337), noted for its ISR (intelligence, surveillance, and reconnaissance) services and sales of modular SUAS such as ScanEagle and Integrator, especially for U.S. and allied operations in Afghanistan, is emphasizing maritime deployment of its SUAS with the shift of U.S. focus to the Indo-Pacific region, Diane Rose, president and CEO of Insitu, said in an interview with Seapower.



The Integrator UAS gets VTOL capability using the FLARES system. Photo Credit: Insitu

Insitu's SUAS have flown 175,000 sorties, accumulating 1.5 million flight hours, including 70,000 hours of maritime operations, Rose said. The SUAS are operated by or for 40 customers – to include 20 navies and coast guards – in 35 countries. The SUAS have been operated from 28 classes of naval vessels.

Insitu's SUAS have been provided to Ukraine via Foreign Military Sales and have been "very successful in that space," she said, and Insitu will "continue to support that effort."

Insitu continues to manufacture air vehicles and provide spare parts, system upgrades, and training to users. Modular sensors, provided by partner companies, can be swapped in the field to flexibly meet mission requirements.

"Our architecture allows us to integrate very quickly third-party sensors and payloads," Rose said. "With the customer's interests and missions in mind, we have a unique capability to

offer solutions that support whatever the customer's needs may be.”

Rose said there was a downtick in ISR services at land-based sites for the United States military since the end of the war in Afghanistan, but an uptick in international interest in Insitu's products and services, especially focused on the maritime domain in the Indo-Pacific region, with an associated evolution in technology to satisfy emerging and changing customer needs.

The U.S. Navy and Coast Guard continue to use Insitu's ISR services. The Navy also has procured Insitu SUAS. Navy units continue to use the RQ-21A Blackjack version of the Integrator, while Navy Special Warfare units use the RQ-27B version of the ScanEagle.

“Maritime operations are hard, and this is what 30 years of experience gives us,” Rose said. “Shipboard movement, shipboard radars and antennas, the EMI [electro-magnetic interference] environment, the harsh weather conditions, global logistics – how do you re-supply your systems, how do you meet the ships at the various ports?

“There's a lot to supporting maritime operations, and I think that's really why you see the success of our systems' enduring,” she said, speaking of the long service of ScanEagle in the ever-evolving field of uncrewed aerial systems.

For customers who procure Insitu SUAS, the company provides training on how to operate the systems and also operates a 24/7 Operations Action Center, which provides customers engineering support and responses to trouble reports.

This year at the Navy League's Sea-Air-Space (SAS) Expo, Insitu will be highlighting its vertical takeoff capability in the FLARES (Flying Launch and Recovery System (FLARES) octocopter, which it introduced at the 2023 SAS. FLARES can carry an Integrator UAS aloft 500 feet and launch it on its

mission, enabling the Integrator to maintain its range, endurance, and payload capacity. The octocopter alleviates the need for a launch rail, reducing the footprint of the system and making shipboard and expeditionary operation easier. The recovery method remains the same.

Rose said Insitu has one customer so far for FLARES that carries a ScanEagle aloft.



At Sea-Air-Space, Insitu will highlight its FLARES systems, which provides VTOL capability to fixed-wing UAS Photo Credit: Insitu

She said the 570-employee company is interested in growing its technical talent but emphasizes lean and efficient operations in a highly competitive industry.

Insitu continues to press forward to address battlespace challenges, including SUAS operations in a GPS-denied environment and with kinetics. The company has conducted inert-drop flight tests from Group2/3 SUAS.

Gaming to Win and Learn at Sea Air Space



The Center for Maritime Strategy “Gaming to Win” event is in its second year at Sea Air Space and offers a little for everyone within the wider wargaming community.

It features the presidents of the Naval Postgraduate and Naval War College and directors of wargaming from NWC and the Marine Corps University Krulak Center. It also highlights top-flight wargames and their designers who will invite participants to play along, and then be part of a panel on the design and use of games.

The first panel on wargaming will Tuesday, April 9 from 2:45 to 3:45 p.m., followed by an interactive wargaming demonstration from 3:45 to 5:00 p.m. and a second panel from 5:00 to 5:45 p.m., all in the Cherry Blossom Ballroom.



Discussion at last year's inaugural wargaming event. Photo Credit: Dan Goodrich

While the panel is called "Gaming to Win," that is really not what wargames actually do for military commanders and civilian leaders. They perform a vital role in testing assumptions that commanders might possess, as well as offering them the opportunity to explore multiple "what if" scenarios. The late Peter Perla, a famous wargamer, described them as "a dynamic representation of conflict or competition, in a synthetic environment in which people make decisions and respond to the consequences of those decisions." Wargames do not answer the question of which side will win, or what weapon system(s) are most effective in war. War games build confidence or raise doubts in existing plans. They are a useful tool in evaluating plans but come with limitations that are not always apparent.

Limitations on Wargaming

Some wargame results are interpreted as the "sure path to victory," or the "inevitable road to defeat" depending on who

reads the results and how they interpret them. Wargame results are sometimes seen as either confirming the rise of a specific weapon system or the condemnation of another to obsolescence. These are false interpretations of game results. First, wargames are only as “good” as their input data. That not only includes order of battle being correct, but also, when available, aspects of gaming that the Naval War College calls “the intangible aspects of military planning.” How “ready is any one opponent ship, aircraft, or submarine in terms of material readiness? Can that platform perform its intended mission as designed?



The board at last year’s wargaming event. Photo Credit: Dan Goodrich

What looks good on paper is not always what it appears. The Russian missile cruiser Moskva was generally rated by Cold War and 1990s-era wargames as able to sustain at least four hits from a medium-sized cruise missile like the U.S. Harpoon weapon and remain afloat. In the real world, the Moskva was sunk by two such weapons, with some reports suggesting the

Russian crew immediately abandoned the stricken vessel and did not undertake damage control actions to save her.

Another intangible aspect of wargame design and conduct is the leadership and conduct of the Red Cell, the team of experts who simulate what the opposing forces do. This has in some cases been a past challenge. From the late 1940s to the late 1970s, U.S. Navy leaders believed the growing force of Soviet submarines had only one main purpose, and that was to attack NATO resupply routes from North America to Europe. Russian leaders like fleet commander Admiral Sergei Gorshkov proclaimed the Soviet navy would confront Western navies on the high seas. The large German submarine fleets of World Wars I and II were designed to break Allied supply routes across the Atlantic. Why else would the Soviets build such a force? Intelligence gathered from wiretaps on Soviet undersea communications cables in fact revealed the Soviet navy's main purpose for its submarines was defense of its ballistic missile submarine force and the protection of the Soviet Union from nuclear attack by Western naval forces. Soviet doctrine said the war would be over before the West could even consider reinforcing NATO by sea.

Getting all of these aspects of wargaming as accurate as possible from the start is essential to setting the stage for game results that can be used by commanders to evaluate plans and the systems to execute them in both peace and war. Wargaming is pursued with victory as the goal, but if it is not sourced with accurate information, it can be a futile exercise.