Sea-Air-Space: ThayerMahan's Outpost TM001 Christened on Show Floor

Australian Ambassador to the U.S. Kevin Rudd speaks as Courtney and ThayerMahan CEO Michael Connor look on. *Photo credit: Brett Davis*

After speaking on a panel about AUKUS, the partnership to build submarines and share technology between the United States, United Kingdom and Australia, Rep. Joe Courtney (D-Connecticut) took to the show floor to celebrate an early technology partnership.

Courtney broke a bottle of "champagne" against the hull of an unmanned surface vessel, the Bluebottle USV from Australia's Ocius Technology Ltd. The vehicle is equipped with a towed sensor array and related technology from Connecticut-based ThayerMahan (Booth 2039).

That vehicle is the first of six to be delivered from Ocius to ThayerMahan and is now named the ThayerMahan Outpost, TM001, aimed at performing persistent surveillance. (Because the event was on the show floor, the bottle was plastic and not filled with bubbly.)

Outpost can be built and deployed quickly and for less than 1% of the cost and personnel compared with legacy acoustic surveillance platforms, the company said. In fact, the Outpost can usually be operated by just one person sitting before a monitor, said retired Navy Vice Admiral Michael Connor, CEO of the company he founded in 2016.

“We were just having a great conversation about AUKUS Pillar 2, and this is it, in three dimensions,” Courtney said before the christening.

He said Connor, the former commander of U.S. submarine forces who became enthusiastic about unmanned systems before they were mainstream is “a prophet, ahead of his time.”

Rep. Joe Courtney of Connecticut prepares to christen the TM001 USV on the show floor. *Photo credit: Brett Davis*

Kevin Rudd, the Australian ambassador to the United States, said the Outpost is "innovation writ large," with a "cheap, usable, deployable, flexible, all-purpose platform" equipped with a sail, solar power and the ability to generate power from wave motion.

"This is quite extraordinary, but also it becomes this wide-area surveillance platform for multiple applications, both civilian and military," Rudd said, later joking that TM001 should be christened with a bottle of Foster's lager and the use of champagne is "possible un-Australian activity."

Robert Dane, CEO of Ocius Technology Ltd., said the second platform sold to ThayerMahan, TM002, is already in the country and TM003 is on its way, "and it's our job to get 4, 5 and 6 here by the end of the financial year, which is June in Australia."

Dane also described the partnership with ThayerMahan an "AUKUS Pillar 2 success."

Speaking earlier to Seapower, Connor said, "the thing that we produce is valuable for both countries in that we do wide-area acoustic surveillance for surface ships and submarines for about a penny on the dollar relative to how we do it with ships, aircraft and submarines. The fact that we do it together with an Australian partner is, I think, a very positive aspect of relations between the countries. We bring a best-of-breed sonar and they bring a best-of -breed vehicle."

He said ThayerMahan had tested is sonar array on virtually every one of the USVs on display at Sea-Air-Space, but "only this one can really handle the size of the array that you need to get the performance."

Sea-Air-Space: SHIPS Act Aims to Counteract China's Maritime Dominance

A Taiwanese Yang Ming cargo ship at the Port of Los Angeles. *Photo credit: Port of Los Angeles*

Most observers agree it's a national security imperative for the United States to counteract growing Chinese maritime domination. The imbalance is stark: Just 80 U.S.-flagged vessels conduct international commerce today, compared with China's 5,500 vessels. But how should America slow this worrisome trend?

One answer may be the Shipbuilding and Harbor Infrastructure for Prosperity and Security (SHIPS) for America Act, a

bipartisan bill to revitalize the U.S. Merchant Marine.

The measure seeks to grow the U.S. international fleet by 250 ships in 10 years through executive-level oversight; consistent funding for shipbuilding; and shipyard worker recruitment, training, and retention.

“I think one of the most crucial and important aspects of the SHIPS Act itself is not even so much what’s in it but that it’s a comprehensive approach,” said Mark Vlaun, deputy general counsel for American Roll-On Roll-Off Carrier Group, at a Sea-Air-Space 2025 panel on April 9. “It’s almost strategic in its own right.”

Among other provisions, the measure would establish for the first time a Maritime Security Trust Fund, similar to the Highway Trust Fund. The fund would provide a steady stream of support for ship construction, including financial incentives; assistance to small shipyards; loan guarantees; and maritime college and career training.

“We’ve always been a maritime nation, but the truth is we’ve lost ground to China, who now dominates international shipping and can build merchant and military ships much more quickly than we can,” said Sen. Mark Kelly, Democrat of Arizona, in a statement introducing the SHIPS Act measure on Dec. 19, 2024.

Kelly, a U.S. Navy veteran and the first U.S. Merchant Marine Academy graduate to serve in Congress, is joined on the bill by Senate co-sponsor Sen. Todd Young (R-Indiana), and House co-sponsors Reps. Trent Kelly, (R-Mississippi), and John Garamendi, (D-California).

The thrust of the legislation reinforces key themes that surfaced repeatedly at Sea-Air-Space 2025: A revived U.S. Merchant Marine attracts more public and private investments in commercial shipyards and suppliers. This in turn accelerates Navy efforts to improve its public shipyards, shore infrastructure, and best practices in shipbuilding.

Combined, these efforts lead to greater maritime military and economic security overall.

Navy and Coast Guard shipbuilding acquisition can already benefit from lessons learned in programs run by the Maritime Administration (MARAD), a U.S. Department of Transportation office that supports maritime transportation infrastructure, including shipyard grants and loan guarantees.

Panelist Dave Heller, MARAD's associate administrator for Business and Finance Development, said he's seen how commercial practices at some of the smaller shipyards can speed the construction of military icebreakers and other similarly sized vessels.

"There are lots of ways to get what you need, to get it in the water quickly, and that's usually through a commercial model," Heller said.

Heller's office supports a variety of opportunities in ship infrastructure support, including an $8.75 million Small Shipyard Grant Program that's inviting applications until May 15, 2025. Shipyards generally with fewer than 1,200 employees can apply for grants averaging $820,000 for capital improvements and maritime training programs.

Supporters of the SHIPS Act argue the measure could better coordinate these programs and national policies to encourage systemic, long-term changes in U.S. maritime policy. "Continuing to maintain a maritime presence is absolutely imperative for us," said panelist Robert Hurd, legislative director for Rep. Garamendi. "[Capitol] Hill in general is really excited for this opportunity

Sea-Air-Space: Shipbuilding, Industrial Base Concerns Come to the Fore for SECNAV, Congress

New Secretary of the Navy John Phelan addresses the audience on the final day of Sea-Air-Space. *Photo credit: James Peterson*

Fourteen days into his tenure as the 79th secretary of the Navy, John Phelan said he plans to focus on three things: strengthening the shipbuilding industry and defense industrial base; creating an accountable, adaptable warfighting culture; and improving the health, welfare and training of Department of the Navy personnel.

“My number one priority as SECNAV is readiness,” Phelan said in a breakfast address on the last day of Sea-Air-Space. “I

wake up every day focused on our readiness, our ability to fight, and a modernization strategy going forward."

For decades, the United States has enjoyed the benefits of being the world's pre-eminent maritime power, he said, but that lack of competition, a bureaucratic inertia and a rigid adherence to the "old way of doing things" has led to complacency, he said.

"China constructed more ships last year alone than we have since World War II," he said. "Our adversaries are not waiting on us to get our act together."

Fourteen days in, "I may have underestimated just how complex this job is," he said. "As everyone in the room knows, leading the Department of the Navy is anything but easy, but I didn't come here for easy. I came here to solve problems."

Among those problems are shipbuilding backlogs. Phelan has already visited the government shipyards in Connecticut and plans to visit the rest, public and private, to help understand the scope of the issue.

When he sat down with the shipyard workers, he was struck by their dedication and sense of mission, Phelan said.

"I said to them, you're not just building ships. You're contributing to our national security, and the president and I thank you for that. In my view, investing in people is as critical to our success as any weapon system or fighting strategy. We're facing a serious shortage in our shipbuilding workforce, which is stressing our performance schedules, exacerbating the strain on our current forces, therefore leading to extended deployments" that put stress on the crews.

"These challenges are not hypothetical. They affect the lives of our Sailors and their families who feel the weight of these pressures every day. The Department of the Navy, working closely with industry, must offer a clear vision for the

future of our shipbuilding workforce, one that includes career growth, competitive compensation and a strong sense of purpose," Phelan said.

Acquisition reform is a perennial challenge for the Department of the Navy and the military at large. Phelan, with a background in business, said he wants to understand why the processes move so slow and why some programs cost so much.

He cited the construction of military barracks that cost $2 million per key, when his company was able to build a luxury hotel in Hawaii for $800,000 per key.

"In the coming weeks I'll review our acquisition systems and identify how we can streamline and reform them. I'll work across the department and especially with industry to find solutions," Phelan said. "We'll restore and maintain operational readiness, fiscal responsibility. In order to do so, I'll rely on experience and insight from the people around me. I'm not interested in echo chambers. I want honest perspective and real results. General Patton said if everyone is thinking alike, someone's not thinking."

Asked how he plans to revitalize shipbuilding and growing the maritime industry, Phelan pointed out he's still new on the job.

"I would say to that question, stay tuned. I'm on day 14. I intend to meet with all of our major contractors, and those who would like to become contractors. I think we have to really ensure that we have a huge, strong base, but we also have competition. And I think we need to provide that by expediting some of our processes and making it easier."

Members of the House Armed Services Committee address the issues facing the maritime services. From left: Moderator Bryan Clark of the Hudson Institute and Reps. Trent Kelly, Jenn Kiggans and Rob Wittman. *Photo credit: James Peterson*

Congressional Insight

Some members of Congress with defense oversight duties spoke shortly after Phelan and said rebuilding the defense and shipbuilding industrial base means rebuilding the workforce and giving them steady demand signals.

Reps. Trent Kelly (R-Mississippi), Jennifer Kiggans and Rob Wittman, both Republicans from Virginia, and all of whom are members of the House Armed Services Committee, appeared on a panel and said there are options to revitalize shipbuilding and the industrial base.

“I think that the speech that you just heard from the secretary of the Navy, and what he reiterated from the president’s direction to him, was shipbuilding, shipbuilding, shipbuilding,” Wittman said. “I love it. But the key is, you

have to get left of that enterprise. And being to the left of the enterprise means if you're going to do shipbuilding, shipbuilding, shipbuilding, it starts with workforce, workforce, workforce."

The Office of Management and Budget needs to give contractors the ability to move money payable at the end of a contract to the beginning to boost workers' salaries and make the jobs more competitive, Wittman said.

"And listen, Congress can do that, but I can tell you by the time the Congress gets through the NDAA [National Defense Authorization Act] and appropriations and it gets in the hands of the Pentagon, that's a 24-month window. Today, it could happen immediately by OMB allowing in those contracts for that money to be moved to the left."

Kelly said the workers also need a steady demand signal, not working on multiple ships one year and none the next.

"We've got to have consistency," Kelly said. "… If you don't have a consistent demand, you can't pay workers, you can't make infrastructure investments, you can't do any of that."

Kiggans and Kelly also said the Navy shouldn't be so quick to decommission ships at a time when it needs more to counter the burgeoning Chinese navy.

"I need the Navy again to come out and say, I want every ship I have. We're keeping our older ships. Every single one of 'em. Now is not the time to be decommissioning ships that we just sent on deployment," Kiggans said.

Kelly blamed Navy officials for ignoring congressional directives to keep ships in play.

"We should not retire a ship, any ship, if we don't have a replacement. Any," Kelly said. "… And I'll tell you, I've seen this … but a lot of times when we tell the Navy you're not

retiring a ship, the answer is, is we'll just make sure it's broke and we'll just say it didn't work, and see, we told you. So, there is no effort to actually make that piece of equipment work. It's, we don't want to do it and we're going to ignore you, Congress, we're going to ignore you, president, we're just going to make sure that it doesn't work.

"We have got to be committed to making sure that everything that we have can be operational at a moment's notice and that we keep them operational and that we keep training those crews."

Sea-Air-Space: DoD Yearns to Embrace AI, But How?

Shield AI co-founder Brandon Tseng, right, discusses AI with DoD officials including Marine Corps Major General Farrell Sullivan, left, and Brian Campo, U.S. Coast Guard. *Photo credit: Dan Goodrich*

Imagine if in 10 years the U.S. Department of Defense had one million aircraft, drones and other platforms powered by artificial intelligence. And, what if by 2045 that number had increased to 100 million?

That's the vision of former Navy Seal Brandon Tseng, who co-founded the AI technology company ShieldAI in 2015. Tseng, along with representatives from the Navy, Marines and Coast Guard, discussed how best to incorporate AI into the DoD during the Monday afternoon session "Transforming Defense: The Power of AI and Robotic Autonomous Systems."

Tseng believes for the armed forces, AI is as game-changing as nuclear and stealth capabilities. He said AI can currently

accomplish about 98% of DoD missions and urged the audience to envision a DoD that's no longer limited by the number of human personnel.

Of course, that can be easier said than done.

Rear Admiral Kurt Rothenhaus, chief of naval research, said the Navy and its fleet commanders are "hungry" to leverage industry AI capability for war fighting, readiness and operations, but there's "a lot of learning and discovery that still needs to be done. We want to learn not just the kit, but also how you approach problem-solving."

Rothenhaus said the Navy recognizes AI is like electricity – ubiquitous. But a key issue regarding naval AI operations is that "we operate in one of the harshest environments in the world, in the ultimate no-fail world of war at sea. It's a different frame of reference than the commercial sector."

Major General Farrell Sullivan, director of the USMC's Capabilities Development Directorate and Department of Combat Development and Integration, said AI could help with two key USMC operational problems: supporting the closing of kill webs and making unmanned systems more survivable in a contested environment.

In the Coast Guard, Brian Campo, USCG chief data and artificial intelligence officer, said AI can be integrated into many missions that rely on massive amounts of data, including search and rescue and managing ports.

"We don't have a lot of autonomous capabilities, but we are expanding," he said. "We have a need and thirst for data."

Campo said the breadth of the Coast Guard's missions is growing rapidly, beyond what even an expanded workforce can handle. He noted autonomous systems could operate in places where massive Coast Guard cutters can't, and AI data collection could help commanders better decide how to engage a

ship in port and conduct law-enforcement activities.

Shelf Life

But there are also concerns about incorporating more AI into DoD operations. Tseng addressed one of them, noting that costs will "come massively down" as AI becomes more widespread. He said in order for the DoD to become a "good buyer" of AI technology, it has to rethink purchasing a 20-year capability.

For instance, he said, the Air Force uses smaller time frames for AI purchases compared to fighter jet purchases. And the Army is trying to buy AI platforms every two years, because that's the average shelf life of an AI system.

Campo said training personnel to use AI is another challenge.

"We can't make an AI officer at the O5, O6 level in two to five years. How do we bring in and train talent?" he asked.

At the USCG Academy, Campo said the goal is to offer trainees the opportunity to automate the tasks they do every day, and build a governance framework that helps them embrace AI in their jobs.

He also urged AI vendors to think about how to deliver their products as services.

"I want to buy a capability; I don't necessarily want to buy a product," he said, noting the Coast Guard may prefer to buy data rather than the platform used to deliver it. "What I really would love to understand is how can industry deliver the service I actually care about without the services I don't specifically have a need for?"

To better implement AI in the short term, Sullivan said he's considering two main levers: making existing platform more lethal, survivable, integrated and affordable; and creating more disruptive capabilities.

“We need better software pipelines, training mechanisms and algorithms,” he said. “We have a sense of urgency to get after it. At the end of the day, AI is going to give a fire-team element the combat power of a battalion-sized element. Human-led operations and maneuvers are going to be massively augmented by AI.”

Sea-Air-Space: HII, HHI Forge New International Collaboration

HII Executive Vice President and President of Ingalls Shipbuilding Brian Blanchette, left, and Won-ho Joo, chief executive of the naval and special ship business unit at HHI, sign the MOU. *Photo credit: HII*

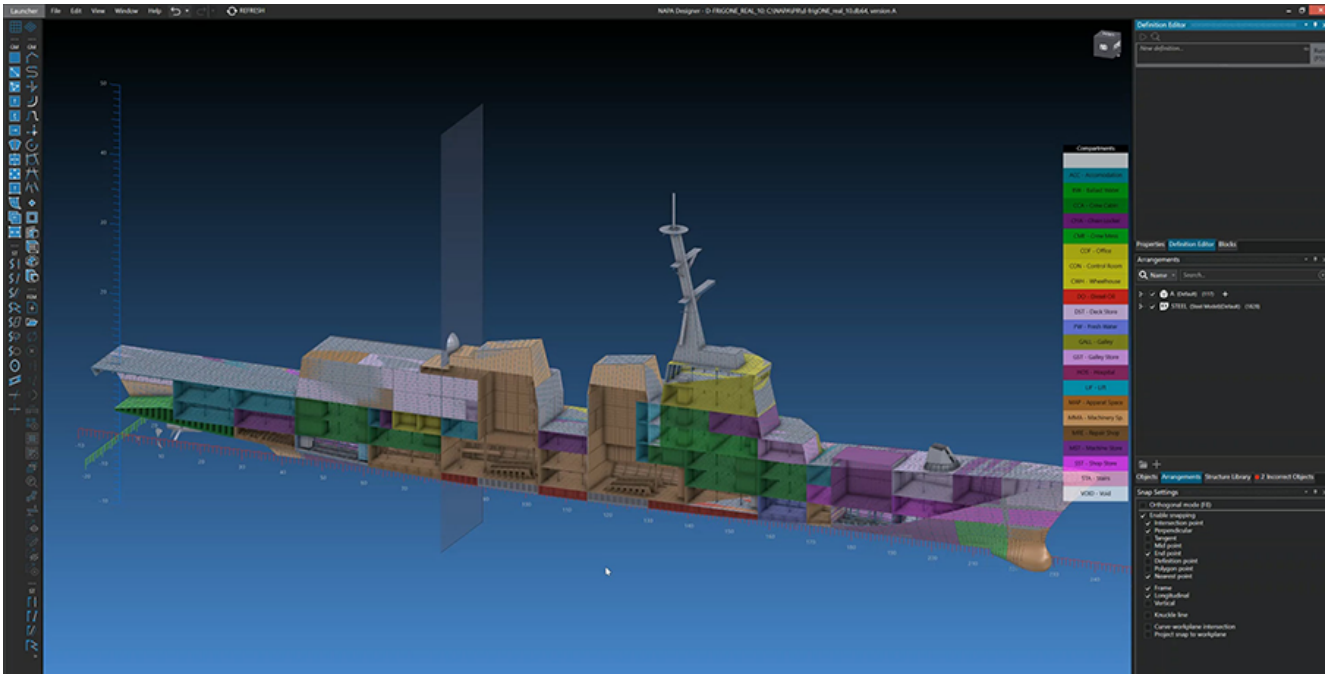
In an April 7 morning ceremony, executives from leading shipyards in the United States and South Korea signed a memorandum of understanding designed to strengthen both companies' technology exchange and productivity.

Details are limited on the MOU between U.S.-based HII (Booth 923) and Korea-based HD Hyundai Heavy Industries (HHI), but "we're open to wherever this relationship can take us," Brian Blanchette, HII's executive vice president and president of Ingalls Shipbuilding, said during the signing ceremony. "By working with shipbuilding allies and sharing best practices, we believe this MOU offers real potential to help accelerate delivery of quality ships."

Blanchette said the MOU will initially focus on technology exchange and component outsourcing for destroyers. "HD has an excellent supply exchange for destroyer programs, and we're looking to leverage lessons learned," he said.

Won-ho Joo, chief executive of the naval and special ship business unit at HHI, said both companies share a commitment to cutting-edge technology. Blanchette said there isn't a firm timeline in terms of milestones for the MOU, but the companies plan to host a delegation in the near future to have a conversation about next steps.

Sea-Air-Space: How Accelerated Digitalization Improves Navy Ship Design



A digitalized ship cross-section from NAPA group. *Image credit: NAPA Group*

Other than the ability to navigate the seas, Navy ship design and cruise ship design don't appear to have much in common. But a Finnish company's software innovations for cruise ships are increasingly being used in Navy ships.

The maritime software from NAPA Group focuses on the holistic design of any floating structure, including ships and submarines. It encompasses everything from productions to operations and includes 3D models, engineering calculations, structure and stability.

"It locks in all of the design elements so there are no surprises during manufacturing that could be extremely costly," said NAPA Group CEO Mikko Kuosa.

Kuosa, whose company is exhibiting in the Finland booth (PL 101), said NAPA contracts with most of the major shipyards and its software is used for over 90% of global shipbuilding. NAPA software has been used to design all of the big cruise ships, including Icon of the Seas, the largest cruise ship in the world.

Some of the trends in cruise ship design are being adopted by

NAPA’s defense customers, Kuosa said. In particular, NAPA’s flooding simulation tool, which predicts within minutes how ship flooding will progress over time and how to maintain mission capability, has been used by cruise ships for 15 years and is now starting to be used in Navy ships. Electronic logbooks are also a cruise ship staple that are making their way to Navy ships.

In addition, NAPA is working on modernizing U.S. shipyards as part of the SHIPS for America Act. Asian and European shipyards already use NAPA software to accelerate digitalization, streamline design workflows, reduce costs and support innovation.

This includes using operational simulation and data at the design stage to inform decisions on new fuels and technologies. Kuosa said a trend in cruise ship construction is voyage optimization design that calculates how best to use wind propulsion for fuel efficiency.

Sea-Air-Space: USMC is Ready to be Tip of the Spear, but Needs Steady Funding, Smith Says

Commandant of the Marine Corps Eric Smith was the luncheon keynote speaker on April 7 at Sea-Air-Space. *Photo credit: Dan Goodrich*

The U.S. Marine Corps is expanding its expeditionary capability and investing heavily in neglected resources to improve its warfighting prowess and the lives and effectiveness of Marines, but unpredictable funding from Congress is making that difficult, the service's leader said April. 7.

U.S. Marine Corps Commandant General Eric Smith was the luncheon keynote speaker at Sea-Air-Space and described the tools and constructs the service is using to project forces.

"I'll begin with what makes the Navy and Marine Corps team the premier expeditionary fighting force on the planet," he said. And that is the ARG/MEU, the Amphibious Ready Group/Marine Expeditionary Unit. An Amphibious Ready Group with an embarked

Marine Expeditionary Unit is the coin of the realm," he said. "It's the Swiss Army Knife of the DoD inventory."

His top priority, he said, is restoring a "3.0 MEU presence worldwide." That means one ARG/MEU off the East Coast, handling the Mediterranean and the coast of Africa, one off the West Coast, handling the Indo-Pacific, and the "episodic deployment" of a MEU out of Okinawa, Japan. Three such ARG/MEUs is the minimum, he said, while the demand signal is for 5.5.

MEUs include light infantry, artillery, light armored reconnaissance, combat aviation, combat service support, medical support and command and control, and "operate as one. They blend themselves into a chainmail fist," he said.

The Amphib Fleet

One challenge for the Marines is reconstituting its amphibious ship fleet, which he said the USMC allowed to atrophy as it turned its attention to combat in Iraq in recent years.

"We didn't look back at our amphibs," he said. They weren't maintained because they hadn't been used in a decade, but "without those ships, Marines can't get to the fight."

The Corps has also been investing in equipment such as the AN/TPS-80 Ground/Air Task-Oriented Radar, or G/ATOR radar, and the Navy/Marine Corps Expeditionary Ship Interdiction System (NMESIS), a remotely operated missile battery, as well as MADIS, the Marine Air Defense Integrated System, which provides the service's first organic air defense system.

"We used to be armed with a Stinger [missile], and that is not enough to get it done against the PRC," he said, referencing China.

Barracks Spending

The USMC is also moving to address longstanding issues with

its infrastructure, namely rebuilding crumbling barracks as part of Barracks 2030, which Smith described as a “heavy lift” that will cost $5 billion over the five-year defense program.

It’s difficult to plan such long-term efforts – 11 barracks renovations were started last year with another dozen planned this year – without steady funding. Members of Congress are supportive of these and other efforts, Smith said, but the reliance on continuing resolutions instead of passing new funding bills causes problems.

“I’ll stay out of politics,” he said. “But I will say we need predictable, on-time funding that only Congress can provide. Meaning, continuing resolutions aren’t continuing anything, they stop our progress.”

Sea-Air-Space: Fighting from the MOC Requires Standardization, Speakers Say

Vice Admirals Kurt Thomas, Michael Vernazza and Craig Clapperton and Rear Admiral Susan BryerJoyner discuss what needs to be done to fight from the MOC. *Photo credit: Dan Goodrich*

The concept of "fighting from the MOC" will require much greater standardization of Maritime Operations Centers, in training, equipping, resupplying and data management and protection, speakers said at a panel April 7 at Sea-Air-Space.

The MOCs are purpose-built for fleet commanders, but that makes them difficult to coordinate, said Vice Admiral Karl Thomas, the director of Naval Intelligence, who moderated the Monday panel on "Fighting from the MOC."

"We would like to have them all configured in a standard manner … so we can modernize them in a better way," Thomas said. "There's a little tension in that, but it's a good tension. In the pace of the fight today, we need to modernize."

MOCs are how the Navy executes fleet-level warfare and facilitates mission command at lower echelons, but the Navy is

seeking to use them as the centerpiece for the type of distributed warfare likely in the vast Pacific.

“We will treat and resource MOCs like the warfighting systems that they are, capable of operating on a decentralized and global battlefield just like all other weapons systems,” the Navy’s 2024 Navigation Plan says.

Vice Admiral Michael Vernazza, commander of Naval Information Forces, said his team is working with Navy personnel officialsto conduct a manpower review of each MOC, starting in the Pacific, focusing on the exact manning each will need to carry out the seven joint tasks outlined in the chief of naval operation’s Navigation Plan.

“By 2027, all fleet headquarters, starting in the Pacific Fleet, will have ready MOCs certified and proficient in command and control, information, intelligence, fires, movement and maneuver, protection, and sustainment functions as assessed by our MOC Training Teams,” the NAVPLAN says.

Investments

Admiral Susan BryerJoyner, director of the Warfighting Integration Directorate, said the main investment that needs to be made to be ready for 2027 is cloud infrastructure and supporting “zero trust” technology to make sure data going into and from MOCs is protected, and available to commanders who need it.

Data visualization doesn’t need to be standard, “but what does need to be standard is the data that underpins it,” BryerJoyner said.

“Every commander should not be able to pick and choose what data he or she wants to use for a specific warfighting function, because as soon as you start to add that variability in, now different commanders are going to see different things and come to different conclusions,” she said.

“This shift from MOC as a commander’s personalized way of fighting to a more standardized way of feeding into the joint force, is the journey that we’re going on now,” she said.

Sea-Air-Space: Readying our Platforms: Admirals Focus on 80% Combat Surge Ready

Admiral Jim Kilby, left, moderates the panel “Ready our Platforms” on April 7. *Photo credit: Dan Goodrich*

U.S. Navy type and system commanders discussed their efforts to achieve a combat surge readiness (CSR) of 80% during the opening panel of the Navy League’s 2025 Sea-Air-Space Expo in National Harbor, Maryland.

Speaking in an April 7 panel – moderated by Acting Chief of Naval Operations Admiral Jim Kilby – were Vice Admiral Daniel Cheever, commander, Naval Air Forces; Vice Admiral Robert Gaucher, commander, Naval Submarine Forces; Vice Admiral Brendan McLane, commander, Naval Surface Forces; Vice Admiral Carl Chebi, commander, Naval Air Systems Command; and Vice Admiral James Downey, commander, Naval Sea Systems Command.

"Combat surge ready-certified units meet a minimum condition requirement for material condition, training, manning and munitions," Kilby said, noting the type commanders on the panel were designated the single accountable officers "to ensure their respective forces achieve 80% CSR."

Kilby laid out the task for his admirals to achieve 80% CSR despite the scheduling, materials, workforce, maintenance availabilities and operations tempo challenges for the fleet, necessary to ready the fleet to meet potential combat with potential adversaries such aa China.

He pointed out that the current drive for readiness began in 2018 when then-Defense Secretary James Mattis directed the service to turn around the dismal readiness of its F/A-18 Super Hornet strike fighter fleet of 250 ready jets and increase the number to 341, a level sustained during the years since. By changing its maintenance practices, the Navy achieved the goal in one year. With that inspiration, other Navy communities, such as the surface and submarine forces, have adopted changes to their maintenance and logistics practices to increase the readiness of warships and submarines.

Kilby said the CSR rates for submarines, surface warships and aircraft carriers today are 67%, 68%, and 70%, respectively.

Cheever noted achieving the 80% for Super Hornet strike fighters was an "all-hands effort all the time" and involved extensive partnering with the defense industry. He defined CSR

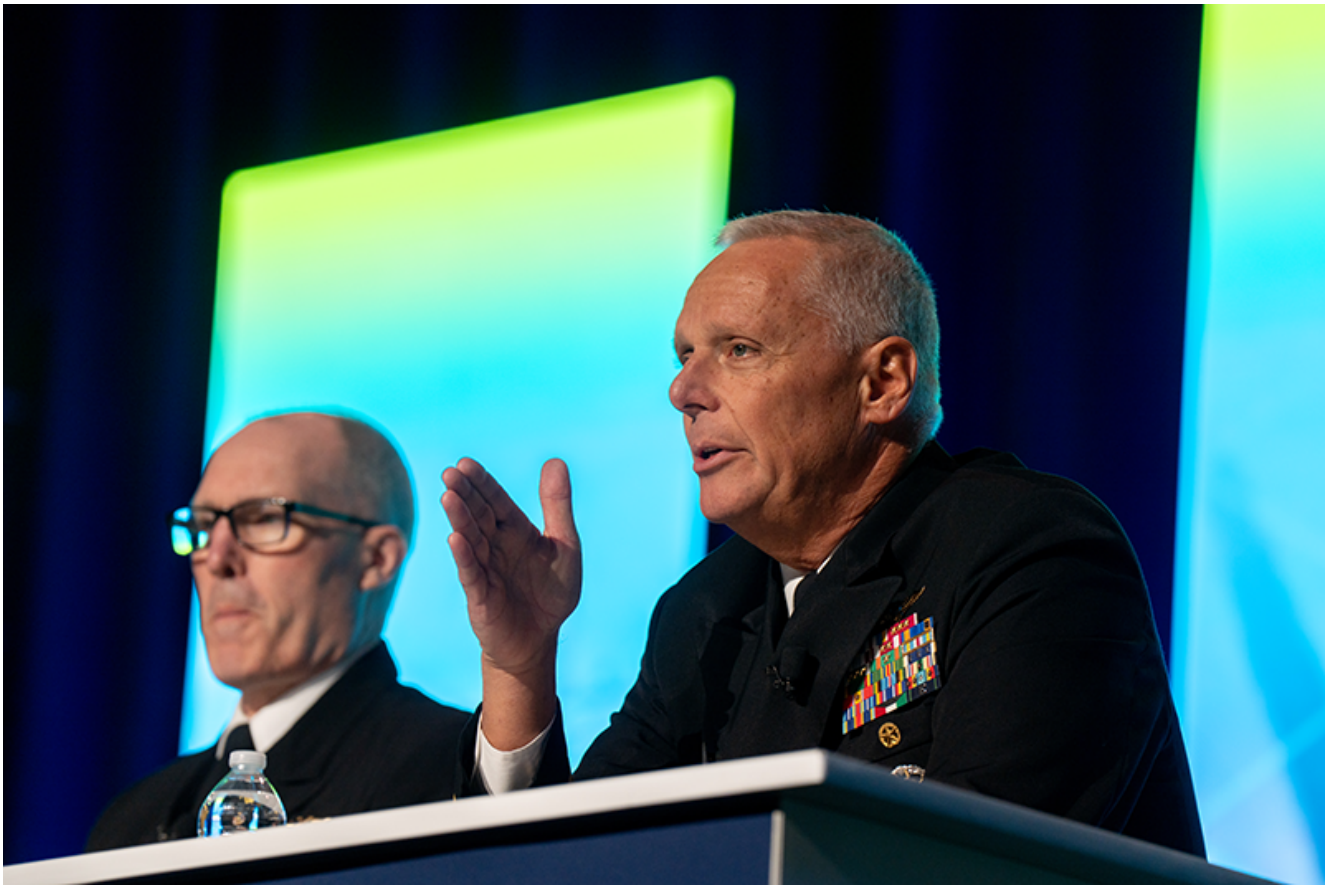
as such: “If we go to war, we have everything we need.”

Chebi said the CSR effort has since expanded to included 22 other types of Navy and Marine Corps aircraft and that the effort to achieve the CSR goal was a “team effort” that had to be focused on data versus stories.

He recounted the Navy “had to be told to do that,” referring to the strike fighter readiness initiative, but that “we developed the playbook. It worked.”

He said the Navy still had challenges with improving CSR in joint programs because it cannot control all aspects of the initiatives.

McLane credited the aviation community with the inspiration for the surface community to similarly focus on readiness. His efforts include CASREP [casualty report, a term for systems degraded or broken] burn-down, restoring ship systems to full capability, and getting ship maintenance availabilities (repair periods) finished on time. An innovative approach to availabilities is to bring ships in more often for shorter period, a method that increases a ship’s likelihood of completion on time. A recent set of 100-day availabilities of were completed 100% of the time, he said.



Vice Admiral Daniel Cheever makes a point during the morning panel on Monday. *Photo credit: Dan Goodrich*

Addressing problems with amphibious assault ship availabilities, McLane said a focus on planning 120 days in advance is inadequate, recommending locking in the plan 500 days in advance and awarding the contract 350 days in advance. Noting recent problems with quality assurance, he recommended involving the original equipment manufacturers rather than necessarily hiring the lowest bidder.

Ships Ahoy

Downey, speaking of new construction ships, noted 12 ships were delivered in 2024, and 92 ships were under contract, 56 of which were under construction. He said he is focused on planning milestones, trying to order materials two years ahead of the construction start of a ship. For improving availabilities, more predictive data are needed, he said.

Gaucher said his goals are to complete submarine availabilities on time and make them ready for combat. He

noted the Navy's four shipyards have room for 10 attack submarines in maintenance but currently have 17 submarines in or awaiting availabilities.

The "just-in-time" parts delivery concept does not work well in practice for the submarine force, he said, recommending instead a "just-in-case" stockpiling concept for parts.

Gaucher said the Navy's shipyards need more structural engineers, not just mechanical and electrical engineers.

He also said the submarine force's inventory of Mark 48 torpedoes has increased by two per boat, and he expects another increase by two within six months.

Sea-Air-Space: RTX's Barracuda Mine Destructor in Ocean Testing

Raytheon has been putting its Barracuda mine neutralization system in autonomous mission testing. *Photo credit: Raytheon*

Raytheon, an RTX company (Booth 911), has been putting its Barracuda mine neutralization system in autonomous mission testing, the company said in an interview with *Seapower*.

The Barracuda is a 26-pound, 48-inch-long anti-mine device housed in a tube the size of an A-size sonobuoy tube. When launched, the device is propelled by four small water jets that take the device to the datum of a suspected sea mine detected by the AQS-20C towed sonar. An acoustic communications data link buoy is released to which the device is tethered. Target updates, such as GPS coordinates, are transmitted to the device, which approaches the sea mine. A sonar and a camera mounted in the nose of the device enables a man-in-the-loop operator – for now – to confirm the mine. The device then is steered to the mine and detonated. Each Barracuda is a one-shot charge.

An engineering development model (EDM) of the of torpedo-like munition has been going through two months of contractor testing in Narragansett Bay, said Bill Guarini, Raytheon's director for Requirements, Capabilities in the company's Naval Systems and Sustainment Unit. For the tests so far, the Barracuda is tethered to its controlling craft.

The contractor testing will continue through 2025 into 2026, Guarini said, with tests against a variety of mine shapes, including bottom, tethered, and near-surface mines. Development Testing to begin in 2026 and Operational Testing to be conducted in 2027, with low-rate initial production also scheduled to begin that year. Raytheon will provide 85 EDMs of the Barracuda for the Navy's tests.

The Barracuda is designed for both surface and air launch. The weapon will be deployed on the Mine Countermeasures Unmanned Surface Vehicle deployed on some Independence-class littoral combat ships. Separately from Raytheon, the Navy is having a Barracuda launcher developed for the MCM USV. A sonobuoy air-launch cannister also is a potential launcher for the Barracuda.