

Sea-Air-Space: CMS Breakfast Panel Discusses How to Make Future Shipbuilding Shipshape



Navy, Coast Guard and industry officials discuss the rebuilding of the United States' shipbuilding industry.

Photo Credit: Dan Goodrich

During his March 4 joint address to Congress, President Donald Trump vowed to establish a new office of shipbuilding within the White House and "resurrect" America's shipbuilding industry.

Implementing that vision poses both opportunities and challenges, said military and shipbuilding leaders during the April 8 Sea-Air-Space Center for Maritime Strategy Breakfast session, "Navigating Tomorrow: Forging a New Era in Innovation and Shipbuilding."

U.S. Navy Admiral Daryl Caudle, commander of U.S. Fleet Forces Command, said one issue is there is a set of strategic assumptions regarding shipbuilding that most people take for

granted, and those assumptions “limit intellectual honesty and our perspective about the size, scale and scope of our challenges.”

Caudle said the largest assumption has to do with combat shipbuilding capacity. He said it’s commonly thought the attack on Pearl Harbor awoke a sleeping shipbuilding giant, but “the only reason we were able to achieve that level of production was because of the groundwork of two years earlier.”

Caudle said there’s a tendency to focus on the decay of U.S. shipbuilding capacity since World War II, but before the war, the U.S. contributed a relatively small amount of global shipbuilding.

“I bring these up to show we have faced the odds before,” he said, adding he’s quite confident solutions are available as long as people are open and honest about the problems, the scale of those problems, and are proactive in solving them without having to undergo a crisis like Pearl Harbor and 9/11.

“Shipbuilding has taken on a prominence and importance we haven’t seen in a century. Coast Guard shipbuilding continues to move, but not move fast enough,” said U.S. Coast Guard Acting Commandant Admiral Kevin Lunday.

He said America is demanding more of its Coast Guard, “but we are less ready than in any time in our history since World War II.”



Admiral Daryl Caudle, left, Admiral Kevin Lunday and Rick Hunt share thoughts during the panel.

Photo credit: Dan Goodrich

Lunday said Coast Guard fleet cutters and boats are at “significant decline,” and there’s a shift to almost complete corrective maintenance of the fleet. “No ship gets underway today without stripping another for parts,” he said. “The pace of modernization has not kept pace with the rate of change.”

However, there are positives on the horizon, Lunday said, citing the U.S. Coast Guard Force Design 2028’s transformative capabilities, along with significant government support. “I’ve not seen this level of support from [the Navy] secretary and the Office of Budget and Management certainly in my career, and maybe in our history,” he said.

Shipbuilding Perspective

A trio of shipbuilders closed out the panel presentations. Retired U.S. Navy Vice Admiral Rick Hunt, president of Fincantieri Marinette Marine, addressed shipbuilding from the

perspective of the end user, including Sailors on a ship and operational commanders.

“I think the focus has to be on platforms that deliver top-level requirements, like combat systems, range, speed, durability and endurance,” he said. But there are challenges to achieving that. “Top of my list is readiness,” he said.

For instance, Hunt said maintenance is a key issue for surface warfare, and condition-based maintenance can be revolutionary. Cyber resilience is also important. “I think that’s where the next war starts and maybe the next war ends,” he said.

Hunt said he believes there needs to be continual engagement between the military and industry when it comes to shipbuilding.

“The primes, the subs and the suppliers – we need to bring all those guys in,” he said. “We can’t have a serial, time-consuming, somewhat bureaucratic process to identify things we need to change and understand the impacts of change. Remember, Sailors are the ultimate customers.”

Kari Wilkinson, executive vice president of HII and president of Newport News Shipbuilding, said she believes “now is the time to challenge what we think about the business. We do things in shipbuilding as we have since the beginning of time.”

But there is now the opportunity to use tools like algorithms and AI and integrate across portfolios, she said.

Mark Rayha, president of General Dynamics Electric Boat, said he’s heartened by the different attitude toward shipbuilding espoused by the current administration. “We talk a lot about the time we’re in – we need to do more; we need to deliver more,” he said.

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.

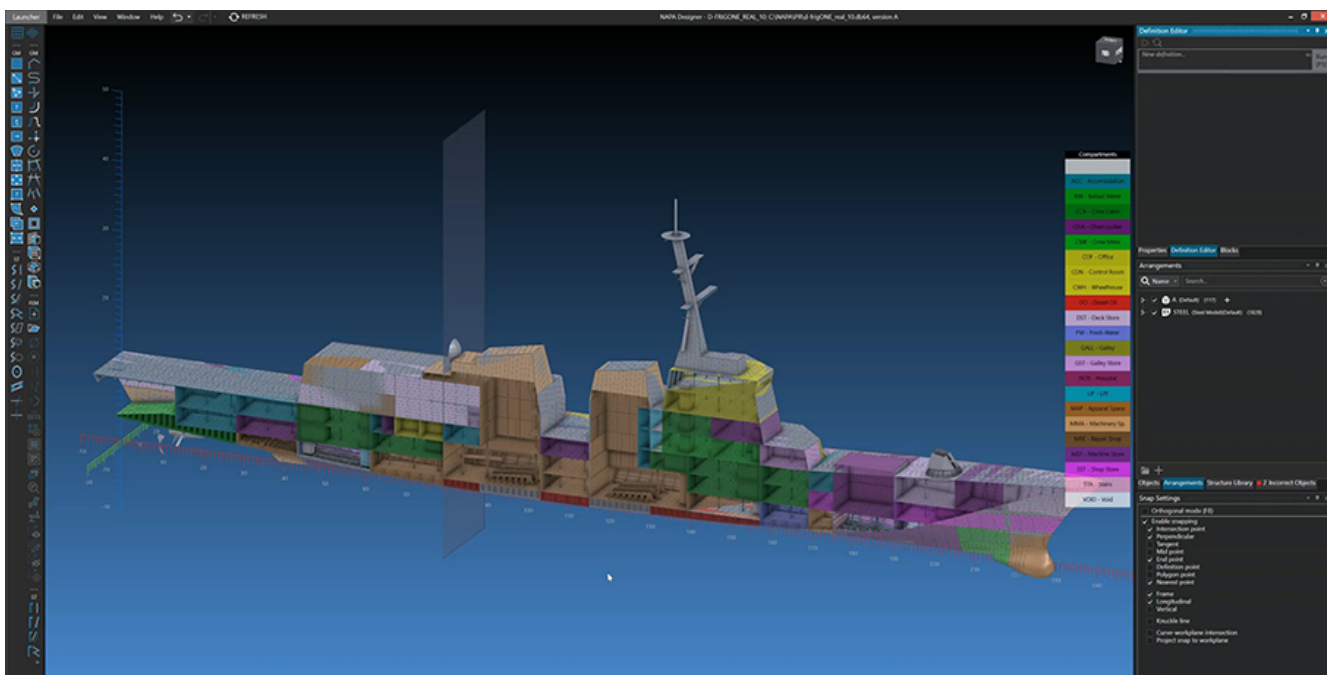
Details are limited on the MOU between U.S.-based HII (Booth 923) and Korea-based HD Hyundai Heavy Industries (HHI), but "we're open to wherever this relationship can take us," Brian Blanchette, HII's executive vice president and president of Ingalls Shipbuilding, said during the signing ceremony. "By 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: 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: New Pit-Stop Approach Can Cut Engine Overhaul from Months to Days, FMD Says



Fairbanks Morse Defense workers overhaul an engine using the "pit stop" method. *Photo credit: Fairbanks Morse Defense*
Imagine if a Navy ship could pull into a pit stop like a race car, get its engine overhauled and be back on the seas in less

than a month. That's what the team at Beloit, Wisconsin-based Fairbanks Morse Defense (Booth 1537) envisioned years ago, and now it's a reality.

"Maintenance has traditionally taken way too long and cost too much money," said Keith Haasl, FMD's president of service and technology.

Haasl notes that a traditional Navy ship engine overhaul, including disassembly, inspection, repair, and reassembly, can take up to nine months. But FMD's pit-stop approach can take as little as 26 days for ship service generators and 38 days for main propulsion engines.

Haasl said FMD did its first pit stop in early 2024 on a ship service generator. Since then, FMD has overhauled eight generators and three main propulsion engines on landing ship, dock-class vessels using the new approach.

"It's been really successful. The fleet likes it. Our partners at NAVSEA [Naval Sea Systems Command] like it, and we sure like it," Haasl said. "It's revolutionized the way the Navy is doing maintenance and how NAVSEA is structuring their Class Maintenance Plans."

Rethinking Strategy

Basically, FMD's pit-stop approach involves rethinking the entire engine overhaul strategy.

Historically, ship engines have been overhauled using an "open and inspect" method. "It was really like incremental discovery. You open up the engine on the ship, take the measurements, inspect it, write the report, go to the customer for approval, get the replacement parts, install them, and then reassemble the engine," Haasl said. "All of this is going on while there's sanding and painting and welding on the ship, which increases the risk of engine contamination."

The pit-stop approach begins with technicians bringing a standardized kit of original equipment manufacturer parts, which are replaced onsite no matter what the engine's condition. These parts are included in the kit because they're essential to engine performance.

The parts that are removed from the ship's engine are taken to the FMD facility, where they're refurbished, inspected, and certified in a controlled environment. These parts are then used in the next standardized kit for an engine overhaul on another ship. This helps save time and costs by avoiding supply-chain issues and ensuring replacement parts are always available as needed.

The pit-stop approach also reduces engine overhaul time and costs in other ways.

"We're doing work pier side, so there are no docking costs. The costs of parts are significantly lower because we're remanufacturing parts that might have been replaced with new parts under the old method," Haasl said. "All of those efficiencies we can gain are tremendous."

Combating Climate Change

Captured by SD 1078 in the Atlantic Ocean during Hurricane Fiona, Sept. 22, 2022. (Video: NOAA and Saildrone)

Excerpted from the upcoming article in the May 2023 issue of Seapower Magazine

As climate change increasingly affects weather patterns over the Atlantic Ocean and Gulf of Mexico, tracking hurricanes and monitoring their intensity has become more critical than ever.

The National Oceanic and Atmospheric Administration (NOAA) reports that between 1980 and 2021, hurricanes caused 6,697 deaths and over \$1.1 trillion in damages. Hurricanes' massive waves and roaring winds can also have catastrophic effects on ships at sea, making accurate forecasting a must for naval operations.

While new technology has steadily improved hurricane-tracking forecasts since the 1990s, predicting how rapidly a tropical storm or hurricane may intensify has been more problematic. To understand storm intensity, scientists measure heat and momentum, collecting data on the exchange of energy between the ocean and atmosphere. But in order to do this in the most accurate way, scientists need data from inside the storm itself.

That's where uncrewed systems come in. "With uncrewed systems, we can either do what we're already doing, but do it more productively and efficiently, or we can go get data we just couldn't get before," said NOAA Corps Captain William Mowitt, director of NOAA's Uncrewed Systems Operations Center.

You can read the full article about how the U.S. Navy, NOAA, and private partners are using uncrewed systems and new technologies to forecast hurricanes in the May issue of Seapower Magazine.

Vicky Uhland is a Colorado-based writer and editor who also covers the Navy League's annual Sea-Air-Space conference.

CMS Panelists Envision Future

American Sea Power



L to R – Admiral James Foggo (Ret.) Dr. William LaPlante, Admiral Christopher Grady, USN, General Eric Smith, USMC and James Geurts discuss issues relating to Reestablishing American Seapower at the CMS breakfast.

During the Center for Maritime Strategy (CMS) Breakfast on Tuesday morning, eggs and pastries provided food for the body, while four leaders from the maritime security community provided food for thought.

The breakfast panel, “Reestablishing American Seapower,” offered a front-row view of how the U.S. military is addressing new threats from adversaries and foreign regimes.

“We face far more challenges today than I have ever seen in my 40 of years of active service,” said moderator Admiral James Foggo, USN (Ret.), dean, Center for Maritime Strategy, Navy League of the United States. He asked each panelist to explain how their teams are addressing those challenges.

William LaPlante, PhD, under secretary of defense for acquisition and sustainment, said what really matters is, “production, production, production. Everything depends on it.”

LaPlante said Navy production is defined as ship construction and other weapons development. He said since the start of fiscal year 2022, the Navy has delivered 14 battle ships, and there are plans to build seven more ships this year and as many as 17 in the following 12 months.

“But we have to do more procurement, more production, and the Navy is going to lead the way,” he said.

Capital Acquisition is Key

The magic bullet is figuring out how to acquire capital, and LaPlante said the Office of Strategic Capital (OSC) is instrumental in that. “But if we’re trying to attract capital, investors want to see a return on investment,” he said. “We need to do a better job explaining that there are production and sustainability possibilities, not just prototypes.”

Admiral Christopher Grady, USN, vice chairman, Joint Chiefs of Staff, discussed his role as head of the Joint Requirements Oversight Council (JROC). He said four transformations are taking place in the JROC:

- Building on the work of predecessors who established more of a top-down culture.
 - Breaking out of system-oriented stovepipes and getting into consolidation management.
 - Transitioning to Intelligence Advanced Research Projects Activity (IARPA) process acquisition review. “It helps us go faster,” Grady said.
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- Keeping a scorecard for what the JROC does.

General Eric Smith, assistant commandant of the U.S. Marine Corps, detailed how the force is pivoting from several decades of land fighting in the Middle East and transforming for the future of combat.

Training and Retaining the Force

“The threat is getting more assertive, more challenging,” he said. “If you want to be ready for the next fight and not the last fight, you have to move.”

Smith said when people talk about force design, they focus on how it affects quantifiable things. “But there’s more than that. It’s about a force that’s mature, experienced and that you can retain,” he said.

“We’re doing better at training,” Smith said, noting that basic infantry training has gone from eight weeks to 14 weeks, with more of an emphasis on teams rather than individuals. In terms of retention, “we hit our recruiting numbers last year and will hit them this year,” he said.

Currently, the Marine Corps is working on organic mobility, which Smith said “provides opportunity to get where you need to go and cuts down on risk.”

Industry Partnerships

James Geurts, former assistant secretary of the Navy for research, development and acquisition; distinguished fellow for Business Executives for National Security, closed the panel session with a discussion of how the Navy is working with private industry.

The key is to transition to network thinking on the industrial base – “what I call the future industrial network,” he said. “The industrial base is not going to carry us for the next 30, 40 years.” The future industrial network is more dynamic and diverse, including international partners, venture-backed startups, traditional contractors and the tech base, he said.

Geurts also touched on capability, which he defined as a combination of equipment and training tactics supported by logistics. “Too much in the industrial base focuses only on

equipment,” he said. On the industry side, Geurts said it’s key to think about networking, to reverse the urge to vertically integrate everything, and to concentrate on how to apply new technologies and innovation to more than just equipment.

U.S. Navy Embraces Diversity Initiatives

The seal of the United States contains just three words: E Pluribus Unum, or Out of Many, One. But achieving that unity has been an ongoing challenge in the military.

During the Tuesday morning session, “Towards a Culture of Unity,” a diverse panel of soldiers engaged in what moderator Admiral John Richardson, USN (Ret.) called a “very practical, authentic discussion” on how to foster more diversity, equity, inclusion and accessibility (DEIA) in the Navy.

Richardson launched the discussion with a question he’s been asked numerous times – is the Navy weaker because it’s spending too much time on “woke” topics like diversity and environmentalism?

“It’s sometimes posed as a choice between diversity and strength, or taking care of the planet and strength,” he said. “But rather than approach this as a choice, a much better way to approach it as “yes, and ...” We can do both. Just like operations and safety – the teams best at operations are best at safety. Unity through diversity enhances your strength as a force.”

But this doesn’t happen on its own, Richardson said. It takes

positive encouragement and a daily commitment.

RADM Sinclair Harris, USN (Ret.), president emeritus, National Naval Officers Association (NNOA), agreed.

“Our Constitution says “a more perfect union. That takes work,” he said. “But Constitutionally, this whole discussion of DEI and A is what you signed up for when you took that oath.”

Transforming Roles

Harris said the most important transformation during his time in the Navy was the elevation of the role of women in the service.

“My first four ships were all boy,” he said. “We got a whole of a lot smarter when we started to elevate women on our platforms. They’ve raised the bar.”

Harris, who is Black, said four things have been important in his career: role models, mentors, coaches and advocates. “Make sure they don’t all just look like you,” he advised.

LCDR Rolando Machado Jr., vice president, Association of Naval Services Officers (ANSO), said it took him a while to understand that a person can serve in all four of these roles at the same time.

“When you meet someone, figure out what role they can play in your life and what role you can play in their life,” he said. “It’s going from a place of ‘what can I get?’ to ‘what I give also brings something back to me.’”

Machado said it’s important to look within the Navy’s ranks and acknowledge the stories of diversity in the past. He told the story of Dorie Miller, a Navy cook third class who was killed in action during the attack on Pearl Harbor. Miller, who helped several sailors who were wounded and shot down four to six Japanese planes using an anti-aircraft machine gun for

which he had no training, was the first African American to be awarded the Navy Cross.

As a Black man, mess attendant was one of the only options Miller had in the Navy at that time. “Can you imagine if the Navy had trained him how to be a gunner, medic, or commanding officer, what type of impact he could have had?” Machado asked. “It’s powerful to think about our past, but also important to recognize the present.”

Deckplate Unity

Lieutenant Andrea Howard, navigator PCU New Jersey (SSN 796), provided context of what it takes to transfer the ideal of a more perfect union to the reality on the deckplate. As one of the first women deployed on a submarine, she’s been part of the evolution over the last decade.

Howard compared DEIA to a patchwork quilt. Like pieces of a quilt, soldiers should be encouraged to keep their own identity while unifying as a whole.

Howard said there are three steps to creating that patchwork quilt:

- Cultural forging, which is most effective when sailors are leading the charge.
- Representation, which shows there’s a future for others like you in this community.
- Allyship, in which people from the majority – especially those in the chain of command – provide a safe and welcoming space for those in the minority.

Captain Emily Bassett, president, Sea Services Leadership Association (SSLA) and founder and moderator of the webinar Lean on Navy, said she was in a Boston University ROTC class when the Navy first welcomed women into the nuclear propulsion program.

Bassett, who commanded the USS Manchester (LCS 14), said she's always been in the first class of women throughout her Navy career. "In a lot of ways I felt different and not part of the team," she said. But after a commander told her to focus on her strengths rather than her differences, she started to feel like she belonged.

Bassett encouraged all soldiers to join an organization like SSLA, ANSO or NNOA, where they can talk about challenges they face and learn how to be part of the conversation around solutions.

A Maritime Century



Admiral Mike Gilday, USN, Chief of Naval Operations, General David Berger USMC, Admiral Linda Fagan, USGC, Ann Phillips, Maritime Administrator, Speak during the Sea Security 2030 and

Beyond: Building the Nation's Future Force Now.

Sea-Air-Space 2023 kicked off its largest conference in history in fitting fashion – with leaders from the Navy, Marine Corps, Coast Guard, and Maritime Administration discussing the future of their forces over the next decade

To comply with the new National Defense Strategy and National Security Strategy, the sea forces are reevaluating how they recruit and retain personnel, and acquire hardware and software. During the Monday morning Sea Service Chiefs Leadership Panel discussion, “Sea Security 2030 and Beyond,” Moderator Francis Rose, founder and host of “The Federal Government Today,” concentrated on two key questions in those areas.

People First

All of you have talked about the importance of investments in people. What investments are you currently making or would like to make?

Ann C. Phillips, RDML USN (Ret.), administrator of the Maritime Administration, said safety for mariners at sea is the “north star of the department.” In late 2021, the Merchant Marine Academy launched its Every Mariner Builds A Respectful Culture (EMBARC) program that improved safety at sea, especially for women and minorities.

Only 7 percent of Merchant Marine mariners are women, and Phillips hopes EMBARC will help boost those numbers. “We don’t want them to be afraid of what will happen to them while at sea,” she said. “We are committed to investing in everyone’s safety at sea.”

Phillips said the Maritime Administration is also building state-of-the-art vessels to train future generations of mariners and encourage them to serve. The first ship, Empire

State, is scheduled to be delivered this summer.

The Maritime Administration is also committed to listening to and delivering what's important to young mariners, Phillips said, including internet access, gym equipment, good food, and vessels that are well maintained and cared for.

"Our goal is to get them at sea and get them to see there's a place at sea for them to advance and move up," she said.

Admiral Linda Fagan, commandant of the Coast Guard, said one of the biggest problems in attracting people to the Coast Guard is that many Americans don't even know we have a Coast Guard, let alone the "true opportunity for service it represents. We always hear: 'Had I known about the Coast Guard, I would have joined sooner.'"

The Coast Guard is committed to doing a better job of marketing and recruiting, Fagan said, including opening nine new recruiting offices and new junior ROTC programs. It's also committed to quality-of-life initiatives like childcare, healthcare and medical access for families.

"Our highest priority is our people," Fagan said.

Gen. David Berger, commandant of the Marine Corps, said the Corps' force-modernization program is focused more on people than operations. Noting ruefully that the 18-30 age group, "is not bashful about telling us what their priorities are," Berger said not all Marine facilities or services are at the standard that service members expect.

"What's important is where they live, the fitness centers, child development centers, where they work, where they eat. We must invest in that now," he said.

Berger said Marine quality-of-life priorities include healthcare. "We have to make sure military members get the very best care in the world, including mental and reproductive

healthcare and training.”

“The thing most people intuitively think about in terms of quality of life is the best and most realistic training, because that’s our best chance at winning,” he said. “We need to train for today, not 30 years ago.” This includes acknowledging that people learn at different paces, and weaving live, virtual and constructive training alongside our allies and partners, he said.

Adm. Mike Gilday, chief of naval operations, U.S. Navy, said the Navy is also making significant investments in live, virtual constructive training, including leveraging technology from the gaming community.

“That is the future, and we’ve found it to be highly effective,” he said, noting that the Navy is also investing in ready relevant learning, including training that’s “not cookie cutter – more creative.”

Talent management is another key Navy recruitment and retention initiative. “We want to be more transparent about what’s available to sailors and how they can manage their own career,” Gilday said. “They’re thirsty for that, and we’re very committed to delivering that.”

Shipbuilding Support

What platforms are you asking for now, and what is the status of those in progress?

“We’re in very good shape in support for shipbuilding. All of our production lines are humming,” Gilday said. “We’re optimistic about stable, predictable funding for ships, and we hope to sustain that.”

Berger said the equipment each Marine wears now is “extraordinary.” And “aircraft modernization is so far down the road, the capability is pretty eye-watering.”

The goal now is to focus on logistics. “The time to set the theater, which we grew up thinking was 30-60 days, is shorter now,” Berger said. “I can’t say it any more strongly: The power of information in a conflict is key to the ability to make adjustments.”

Fagan said the Coast Guard needs more ships with polar capacity, and the Polar Security Cutter Program is dedicated to doing that.

“We’re working on great state-of-the-art vessels and are in a great place in regard to acquisition, but we still have significant infrastructure backlog,” she said. Some shore facilities are in poor shape, and the Coast Guard would like 3 to 5 percent growth in infrastructure funding. Any current increases in funding are going to operations, including information-technology investments, she said.

Phillips said the average Maritime Administration Ready Reserve vessel is 45 years old. Consequently, the Administration, which is funded jointly by the U.S. Department of Defense and the Department of Transportation, is working to service existing vessels and buy two new, used vessels a year.

The Maritime Administration has also launched a port infrastructure-development grant program as part of its mission to foster, promote and develop the U.S. maritime industry. Last year the program funded \$700 million in grants, and it has an equivalent amount available this year, Phillips said.

Coast Guard Uses New Tech for Oil Spill Response



Kirsten Trego talks about the USCG – Oil Spill Response: Tech Effort on the Horizon in the exhibit hall.

When most people think of the U.S. Coast Guard, they envision daring rescues at sea. But the USCG has a variety of lesser-known but equally important duties, said USCG Capt. (Ret.) Kirsten Trego.

During the Monday morning presentation, “USCG Oil Spill Response: Tech Efforts on the Horizon,” Trego discussed how the Coast Guard is the federal on-scene coordinator for oil-discharge cleanup in the coastal zone. That zone not only includes the nation’s shores, but also rivers, waterways, the Great Lakes and more.

“If something happens, we’re the best prepared,” she said.

The USGS has a 30-person team dedicated to oil-spill

responses. One of the team's focuses is working with the oil and gas industry, state and local governments, federal agencies and academia to research how oil spills are evolving and how best to deal with them.

Trego said these research initiatives include the Great Lakes Oil Center of Expertise, which is dedicated to research, training and testing focused on freshwater and cold-weather conditions during an oil-spill response.

The Coast Guard is also increasingly relying on uncrewed systems to more quickly and safely respond to spills, Trego said. New technology like sub-surface remote sensing uses long-range autonomous underwater vehicles to detect oil under ice in the Great Lakes. There is also an air focus, including remote-sensing unmanned aircraft systems (UAS).

"And where the fun is, is the NOAA MESDIS Marine Pollution Surveillance Program from space," Trego said. Remote-sensing UAS can see oil spills from space, characterize them and report the data.

Trego anticipates more UAS involvement in oil-spill responses in the future. "In the changing landscape of more oil exploration and more risk, traditional methods are no longer viable," she said. "When spills happen, we need to be ready and available to handle them."