Northrop Grumman Laser Weapon System Completes Deployment on USS Portland

Amphibious transport dock USS Portland (LPD 27) transits the Gulf of Aden, Dec. 13, with a Solid State Laser – Technology Maturation Laser Weapons System Demonstrator Mark 2 MOD 0 on board. The Office of Naval Research selected Portland to host the laser weapon technology in 2018. *U.S. MARINE CORPS / Lance Cpl. Patrick Katz*

NATIONAL HARBOR, Md. – The Laser Weapon System Demonstrator deployed on the U.S. Navy's amphibious platform dock ship USS Portland (LPD 27) has competed its first deployment as the Portland returned to its homeport of San Diego in March.

Donna Howland, Northrop Grumman's acting business development director for Directed Energy and program manager Laser Weapon System – Demonstrator, told *Seapower* April 6 the Navy said it was "able to exercise the high-energy laser in the 5th Fleet

in December 2021.”

The single LWSD was installed on Portland in October 2019 and was first lit-off in December 2019. The Portland deployed for the Indo-Pacific and Central Command areas of responsibility in August 2021.

The 150-kilowatt LWSD is mounted on the superstructure of the Portland and is integrated with the ship’s combat information center, where a control console is installed. Northrop Grumman made the Tactical Laser Core Module of the system, while the U.S. government made the system’s energy and thermal storage modules.

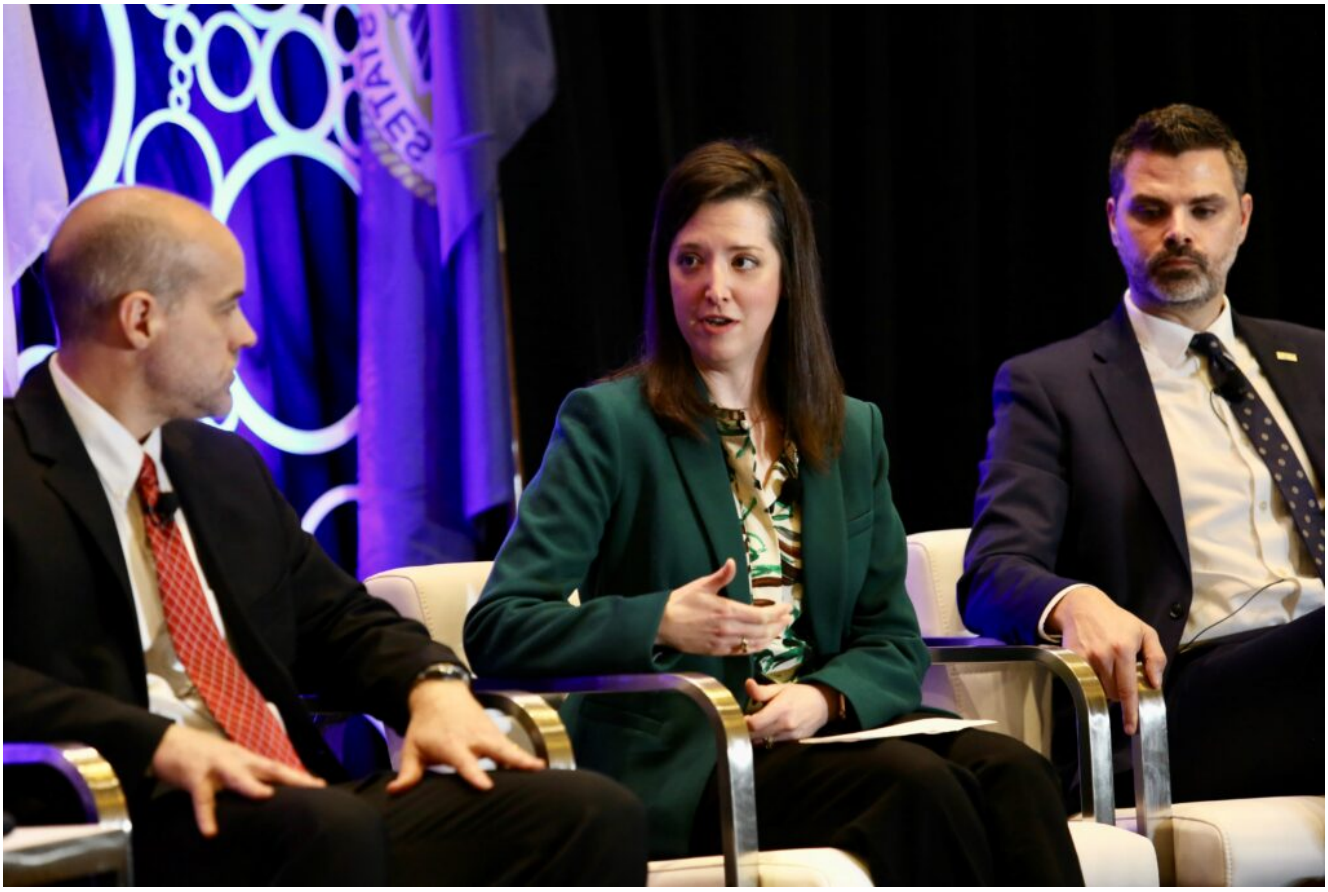
Northrop Grumman continues to provide test and sustainment support for the LWSD, for which it is under contract through fiscal 2022, Howland said, who noted that the company is working on a follow-on sustainment contract.

During the deployment on the Portland, the LWSD was operated and maintained completely by Sailors. No company employees were on board to support the system. The company provided training on the system before the deployment and developed a three-volume operation and maintenance manual for Sailors to use on the ship, she said.

Howland said the company is looking forward to working with the Office of Naval Research to provide next-generation directed energy systems.

“We are excited about the MOSA [Modular Open System Architecture] that the Navy is looking at,” she said. “We really are a proponent of this as we believe it will improve the health of the supply chain and base to support directed energy as we move these systems from science fiction to science fact.”

Open-Source Data Brings Challenge and Opportunity



Megan Dane, director of plans and programs in the Office of Naval Intelligence, makes a point during a panel discussion on open-source data. *LISA NIPP*

NATIONAL HARBOR, Md. — Open-source data is a "fascinating," if vexing, issue that has transformed how information is disseminated and consumed, according IT professionals in an April 5 panel discussion at Sea-Air-Space 2022.

"When we say open-source intelligence and open-source information, it could be literally anything you see on the internet," said moderator Shane Harris, a senior national security writer at the Washington Post. "It could be things that are produced by the press. It is tweets, it is YouTube

videos. It is an overwhelming amount of information."

Panelist Joseph Obernberger, a software engineer in Space & Intel for Peraton, said his interest is in "big data." Peraton assists government agencies with global national security, enterprise IT and cyber solutions and supports missions that include cyber, digital, cloud, operations and engineering. Obernberger said the problem with scale and managing information is a priority for him. Furthermore, open source is a challenge because there is so much data – "a lot of stuff" – in which the intelligence community is not interested to have as open source.

"[Open source data] is huge problem," said Obernberger. "The number of Tweets per day, the number of YouTube videos per day. Seven hundred and twenty thousand hours of YouTube videos are uploaded per day. If you were to watch that, it would take 82 years. So, how can we build systems that would scale to that level? If you consider just a billion records. If it takes a computer one millisecond to process a billion records, that is 11 and a half days for one system to do that. We need to deal with trillions of records."

Panelist Megan Dane, director of plans and programs in the Office of Naval Intelligence, said, "We are really concerned with what types of information we are looking at and what we're not looking at. We try to really leverage the commercial industry and what you are able to create through big data analysis and things of that nature, and then really pinpoint through requirements what information sources and streams we need to ingest, and then really clear the way for our analysts so that they don't have to ingest or syphon through all the rest of it. That is really the most important part for us in that front-end proces."

Panelist Andy Henson, a senior vice president for artificial intelligence at SAIC, said it has "gotten harder to know what matters." He suggested a method for handling so much data

involves knowing what to look for.

“My simple filter is, what question do we want to ask with the data?” Henson said. “That gets rid of a lot of noise. What question do we want to ask of the data, and then we can get to a real subset of the data and start getting at some of those challenges.”

Leidos PM: Big Vendors Must Do More to Open Electronic Warfare Interfaces to Developers

Leidos’ Ran Hidalgo discusses the software challenges with

electronic warfare, stating, “A number of times, there were problems I had never seen until I’m actually in flight.” *LISA NIPP*

NATIONAL HARBOR, Md. – In order to push future advancements in the area of electronic warfare, industry must find a way to open their interfaces to software developers, a Leidos program manager said during a panel discussion on electronic warfare at the Navy League’s annual Sea-Air-Space symposium here on Tuesday.

One of the key challenges in the EW realm is trying to work out problems with software before sending it back to the vendor, said Ran Hidalgo, a program manager for Leidos, who said he sees this issue in his own experiences with flight.

“A number of times, there were problems I had never seen until I’m actually in flight,” Hidalgo said. “I’m finding that software starts to reset for no reason. Why is that? Well, we’ve got to figure that out.”

The next step is to take it back to the vendor, but that slows down development, he said.

“You’re trying to minimize those situations where you have to kick things back to the vendor in order to actually resolve [the issue],” he said.

Hidalgo said that a lot of the future innovation with EW systems won’t happen with vendors who are building those systems today, but rather with software companies down the road. He pointed to the iPhone and how it revolutionized technology, but noted that it wasn’t the iPhone itself that has had the impact but the apps it hosts.

“I think about EW in this same manner when it comes to this technology,” he said. “Allowing third-party developers open access to existing systems and future systems is really changing the game in terms of how EW systems can be handled.”

However, bigger vendors are often resistant to this movement, and that is why industry and the government need to rethink things to an extent, Hidalgo argued.

“That is a challenge, because a lot of OEMs [original equipment manufacturers] and the big vendors that build EW systems today don’t necessarily like to expose their interfaces,” he said. “We get it, it’s a business, but I think there needs to be some sort of concerted effort between the services, the government and industry to allow other players to play.”

Coast Guard is Upping its Game on Cyber, Human Resources and Equipment, Panelists Say

Capt. Laura D. Collins, acting director of civilian human resources at the Diversity and Leadership Directorate, discusses Coast Guard advances in training while Capt. Russell E. “Rusty” Dash, the C51 Service Center commanding officer, looks on. *BRETT DAVIS*

NATIONAL HARBOR, Md. — In his last Sea-Air-Space visit in uniform, U.S. Coast Guard Commandant Karl Schultz led a panel discussion about the service, which is rapidly seeking to upgrade its equipment, software and human resources to keep up in a competitive world.

“The demand for Coast Guard services, at home and abroad, has never been higher,” Schultz said.

He introduced his nominated successor, Adm. Linda Fagan, the current vice commandant, and her nominated vice commandant, Vice Adm. Steven D. Poulin.

“I will sleep well at night,” Schultz said. “They are rock stars and we are in good hands.”

Schultz guided the panel through a discussion of how the

service is upping its game when it comes to connectivity, human resources and equipment, including ships to replace or augment an aging fleet.

Capt. Russell E. “Rusty” Dash, the C51 Service Center commanding officer, said under Shultz’s direction the Coast Guard kicked off a “tech revolution” in March 2020, to try to get away from the service’s reputation of delivering “yesterday’s technology tomorrow.

“The tech revolution is about empowering the people of the Coast Guard with reliable, mobile and integrated capabilities so they can better do their job,” he said, noting that most Coast Guard work doesn’t take place behind a desk.

It’s a mobile-first approach that gives Coasties the hardware and apps they need to “do their work wherever they do their work,” and includes beefing up cutter connectivity as well as on-shore networks.

The service is also getting ready to turn on a “software factory,” based on the Air Force software factory model, to promote “software developed by Coasties for Coasties in a standard way,” Dash said.

Capt. Laura D. Collins, acting director of civilian human resources at the Diversity and Leadership Directorate, said the service is taking a similar approach with its people.

“We want a best-in-class workforce for a best-in-class Coast Guard,” she said, building on a document called Ready Workforce 2030, which calls for modernized learning and training tailored to the individual.

“In order to be the employer of choice, we’ve got to train to retain,” she said, including on-demand e-learning not just training at dedicated centers.

Navy League CEO Mike Stevens, left, and National President David Reilly, right, present Coast Guard Commandant Adm. Karl Schultz with the Navy League Scroll of Honor. *BRETT DAVIS*

Rear Adm. Douglas Schofield, assistant commandant for acquisition and chief acquisition officer, highlighted new ships coming on line, include the offshore patrol cutter and a new icebreaker.

The offshore patrol cutter joins new national security cutters and fast response cutters, and will complement them through its presence in exclusive economic zones and beyond.

“It is critical for that multi-mission presence that you always talk about, sir,” and has “outstanding human system integration,” including common boat launch systems and helicopter accommodations.

Schultz noted there is significant conversations about how many ships the U.S. Navy has, but the question of how many ships the Coast Guard has tends to fall under the radar.

“We’re going to have a fleet of 100 new ships here. When you

roll in these 11 national security cutters … 64, now 66, fast response cutters, 25 OPCs, that is a fleet of 100 very capable ships … I think that 100 is going to continue to up our game."

At the end of the breakfast, Schultz was presented with the Navy League Scroll of Honor by National President David Reilly and CEO Mike Stevens.

Early Days in the Sea Services Helped Focus Their Careers, Women Leaders Say

Rear Adm. Megan Dean, director of government and public affairs at the Coast Guard, makes a point during the Women's Leadership session. *LISA NIPP*

NATIONAL HARBOR, Md. – Senior-level women from across the sea services shared personal and professional insights and anecdotes about their earliest days in the military, and what helped guide them to the tops of their fields, in a panel discussion on Women's Leadership on April 5 at Sea-Air-Space 2022.

U.S. Navy Capt. Emily Bassett, serving as moderator of the panel, also hosted the event on behalf of the Sea Service Leadership Association. Bassett is president of SSLA, the only nonprofit, national, volunteer-driven organization dedicated to the promotion, advancement and mentorship of women in the U.S. Navy, Marine Corps, Coast Guard, and National Oceanic and Atmospheric Association.

"Today's event is a women's panel, but really it's about people," Bassett said. "It's not just about diversity of gender, it's about diversity of thought and it's about bringing our whole selves to the table. Today's focus will be women leaders … who have made it to the top of their teams [and] who are willing to share their story."

Maj. Gen. Bobbi Shea is the legislative assistant to the Commandant of U.S. Marine Corps. Shea described herself as a "distracted youth" when she was a child growing up.

"I spent a lot less time in high school than … I should have," Shea said. "So, I enlisted in the Marine Corps really not knowing what I was getting into. But I will tell you when I put my feet on those yellow footprints in Paris Island, I tell people it was like coming home. Coming home to place that I had never been before. The discipline, the challenges, the rigor, the teamwork – all of these standard, base concepts quite frankly were foreign to me growing up."

Shea said what she learned early on at boot camp was that meeting the challenges and standards was not so much about personal ambition, but "what you could bring to the team." She

said this thinking, more than personal ambition, drove her behavior and informed how hard she worked and how hard she tried.

Rear Adm. Megan Dean, director of government and public affairs for U.S. Coast Guard, said she wasn't sure she was a good fit for the Coast Guard when she attended the U.S. Coast Guard Academy. Her feelings changed shortly after she graduated.

"I will tell you, I graduated, I got my commission. I showed up to my first unit, which was a 210-foot Coast Guard Cutter," Dean said. "Our mission was mainly search and rescue and law enforcement all up and down the East Coast to the Caribbean, and I will tell you that I felt like I fit – that my talents matched those of my chosen profession."

HII Official: Company is Confronting Challenges of Inflation and Workforce

Shipyard workers watch as the upper bow unit of the future aircraft carrier USS John F. Kennedy (CVN 79) is fitted to the primary structure of the ship, July 10, 2019, at HII Newport News Shipbuilding. *HII / Matt Hildreth*

NATIONAL HARBOR, Md. – A senior HII official said he is optimistic for the company's future, despite the increasing price inflation of materials and the difficulties of attracting skilled labor.

HII will "make the ships we deliver more effective and more

protected” said the official, speaking on background to reporters at the Navy League’s Sea-Air-Space expo at National Harbor, Maryland, as he addressed the challenges and concerns that also affect much of the shipbuilding industry.

The official said price inflation is affecting long-lead materials, not so much for ships nearing completion but for newer-construction ships recently started or those for which long-lead materials have been ordered. He said locking in a price is essential to avoid delays. In some cases, the sequence of building a ship has to be changed to avoid slowdowns in the build cycle.

The two-carrier procurement by the Navy for CVN 80 and CVN 81 allowed HII to lock in prices for materials for CVN 80; for CVN 81, the carrier is “not as exposed as it might have been” to price inflation. HII expects to lay the keel of CVN 80 this year and begin construction on CVN 81 as well.

The official said the Navy’s fiscal 2023 budget made good steps in funding to support the supplier base and developing skilled workers.

“Once they’re gone, they’re gone forever,” he said of suppliers who go out of business.

The workforce may even be a tougher issue because of the effects of the COVID-19 pandemic. HII never shut down during the pandemic, but some employees left the workforce and the number of applicants dropped significantly.

The official said that HII needs to get “labor back in the yard.”

The company is investing in developing talent and runs what it says is the premier apprentice school in the nation and perhaps the world. HII also is building shop facilities for high schools to attract students to skilled artisan programs.

HII has found that many potential workers who “walk in” for jobs don’t last because they did not realize how hard shipbuilding is. The company found that for workers who have been in the yard for 18-20 months, if they stay another two years, their earnings go up significantly and they settle into a long career.

Language also is less of a barrier for a prospective worker than might be presumed. HII instructs in both English and Spanish. The official said the company would love to hire more Mexicans with green cards and would welcome Ukrainian refugees to apply.

CEO Appearance

“HII is well set up for the future,” said Christopher D. Kastner, who became president and CEO of Newport News-based HII March 1. He met briefly with reporters April 5 at Sea-Air-Space 2022.

HII, the nation’s builder of aircraft carriers and co-builder of submarines, has a very deliberate strategy for the next five to eight years, with $40 billion worth of orders on the books and recent acquisition of Hydroid and Alion, with which the company has expended into unmanned systems, autonomy, artificial intelligence, machine learning and sensors and anticipates growth of 7% to 9%.

With the recent acquisition, HII is now the lead developer of the Minotaur mission system that will be fielded on more systems, and will expand more into intelligence, surveillance and reconnaissance “on the edge” and counter-ISR as well.

Northrop Grumman Looks to Expand Fire Scout Missions

Sailors attached to Helicopter Sea Combat Squadron (HSC) 23, assigned to the Independence-variant littoral combat ship USS Jackson (LCS 6) and Naval Engineering Technology (NET) technicians perform ground turns on an MQ-8C Fire Scout on the flight deck of Jackson. *U.S. NAVY / Mass Communication Specialist 3rd Class Andrew Langholf*

NATIONAL HARBOR, Md. – With all 36 planned MQ-8C Fire Scout unmanned helicopters delivered to the Navy, the manufacturer, Northrop Grumman, is looking at expanding the range of missions the Fire Scout could provide.

Scott Weinpel, Northrop Grumman's business development official for the Fire Scout program, said the company will continue to support MQ-8C deployments on littoral combat ships. He also is looking forward to the MQ-8C's deployment on the Constellation-class guided-missile frigates; operation of the MQ-8C is included in the Capability Development Document for the frigate.

Weinpel also said the Fire Scout may have a role in operating from shore sites under the Expeditionary Advance Base Operations concept, including in a logistics cargo role.

Potential future roles for the MQ-8C include mine countermeasures and anti-submarine warfare. The Coastal Battlefield Reconnaissance and Analysis Block II, is the next-generation MCM sensor for the MQ-8C (the Block I is flown on the older MQ-8B version.

A Bell 407 helicopter, acting as a surrogate for the MQ-8C, has demonstrated the capability to drop ASW G-size sonobuoys. Weinpel said the MQ-8C could be modified to carry an ASW torpedo, although carriage would result in some loss of endurance of the MQ-8C. The UAV also could monitor a sonobuoy field as an RF signal relay.

The MQ-8C currently flies with the Brite Stat II electro-optical/infrared sensor turret, the ZPY-8 radar, and the Automatic Information System.

Weinpel said the Navy so far has not indicated any plans to arm the MQ-8C, which has been tested to fire Advanced Precision Kill Weapon System rockets.

Corporate Cybersecurity Expert Says Think Like an Attacker to Improve

Information Security

“You’ve got to be able to take a punch in this environment,” said Lt. Gen. Matthew Glavy, the Marine Corps Deputy Commandant for Information. *LISA NIPP*

NATIONAL HARBOR, Md. — The U.S. government, military and private sector need to change the way they perceive cybersecurity and look at it from the attacker’s point of view, the global head of IBM’s X-Force said.

“I think that we will look back at 2022 as a tipping point for information security and the way we work with each other: private sector, public sector. Really, all of these silos which we’ve built up are meaningless for attackers,” Charles Henderson said April 5 during a panel discussion on maritime cybersecurity at Sea-Air-Space 2022.

“They care about their rules, not yours,” he continued. “All too often in information security, whether it’s public sector, private sector or somewhere in between, we tend to think of

our own goals and not the goals of the attacker. I think if we're going to be successful, we need to turn that on its head and start looking at everything through the eyes of an attacker."

All of the panelists agreed that keeping information secure is essential to maintaining an advantage over adversaries and keeping them from gaining an advantage.

Navy Rear Adm. John Okon, the head of the Warfare Integration Directorate (N2/N6F) in the Office of the Chief of Naval Operations, said "Cybersecurity is really about warfighting. It's important that we get cybersecurity right, up front, if we're going to be a lethal, agile and ready force." To underscore its importance, Okon called cybersecurity "commanders' business," but he added that "everyone that puts their fingers on a keyboard has a role in responsibility and accountability for cybersecurity."

Okon said the Navy Department needed to shift its culture from compliance to readiness. "Expect what you inspect. That's walking the deck plates every day, looking at your network every day." Making sure that the speed from when a vulnerability is identified to a patch is in place comes not in weeks, "but minutes or seconds."

Lt. Gen. Matthew Glavy, the Marine Corps Deputy Commandant for Information, said the side that is able to maintain the information advantage "has an edge." That edge could be system overmatch, a good prevailing narrative of "trusted, competent, delivered with trade craft," or resiliency. "You've got to be able to take a punch in this environment," Glavy said "and the side that can take that punch and either counterpunch or begin anew, creates an edge."

The Marines are in the final stage of crafting a new information doctrine, Marine Corps Doctrinal Publication 8 Information "all founded on our warfighting construct of

maneuver warfare.”

“Protecting your own backyard, you’ve got to have a good defensive perimeter and terrain that you can defend to ensure your capabilities are available where and when you need them. That’s job one for us,” said Rear Adm. Mike Ryan, commander of Coast Guard Cyber. He said the Coast Guard was following the lead of U.S. Cyber Command, generating forces that allow the agency to provide the entire spectrum of capabilities to protect the homeland, ensure mariner safety and secure the $5.4 trillion economic activity that arrives on U.S. shores by maritime commerce.

Marine Corps CH-53K Set for Initial Operational Capability in 2022

The CH-53K King Stallion. *LOCKHEED MARTIN SIKORSKY*

NATIONAL HARBOR, Md. — The Marine Corps expects the CH-53K King Stallion heavy-lift helicopter to reach initial operational capability “in several months,” the Navy program manager said.

Marine Col. Jack Perrin, the program manager, said that the first fleet CH-53K squadron, HMH-461, will have four CH-53Ks by the end of April, the minimum number needed to reach IOC and the number needed for a detachment to deploy with a Marine Expeditionary Unit.

The first deployment of the CH-53K is set for 2024. The Corps plans to field 5.25 fleet HMH squadrons with CH-53Ks. Perrin said the ".25" is an extra four aircraft for one of the squadrons, with each of the other four squadrons to be equipped with 16 helicopters. Other CH-53Ks will be assigned to a fleet replacement squadron and test squadrons, while others will be in process through the maintenance pipeline.

The Marine Corps' eight HMH squadrons equipped with the older CH-53E in recent years have operated with only 12 helicopters instead of 16 because of attrition over the years. Three of these squadrons will be de-activated in the course of the commandant's Force Design 2030 plan.

The Marine Corps has a requirement for 200 CH-53Ks. Full-rate production is planned for 2023. Full operational capability is scheduled for 2029.

In addition to the two low-rate initial production CH-53Ks delivered in October and February, there are seven in the Lockheed Martin Sikorsky production line in Stratford, Connecticut. Currently 46 aircraft ae under contract, including four for Israel. Long-lead materials are on order for another 14 CH-53Ks. Deliveries in 2022 will total four, followed by eight in 2023 and 16 in 2024. The production rate will reach two per month for the Marine Corps, plus one per month for foreign customers as needed.

Israel is the only foreign customer for the King Stallion so far. Potential customers include Germany, the Republic of Korea, and Switzerland, plus others who have expressed interest. Germany plans to run a competition that is expected

to occur in 2022.

Perrin, who has flown more than 30 different types of aircraft, said the CH-53K, with its digital flight controls, is the easiest aircraft to fly in his experience. The stability afforded by the flight controls enables the CH-53K to easily land in a degraded visual environment such as dust cloud. It also makes aerial refueling more stable and reduces swaying of an external load.

DoD Addresses Supply Chain Woes Both Pre- and Post-Pandemic

Karen Fenstermacher, with Naval Supply Systems Command, talks

during the Supply Chain Risk Roundtable. *SOLARES PHOTOGRAPHY*
NATIONAL HARBOR, Md. – The COVID pandemic has spiked consumer interest in supply chain issues. But for the Department of Defense, supply chain problems have existed for decades, said panelists during the Supply Chain Risk Roundtable held April 5 at Sea-Air-Space.

Chris Espenshade, director of small business for Naval Supply Systems Command, kicked off the roundtable discussion with an examination of the issues affecting global supply-chain resiliency. Everything from big data analytics to port closures and border delays impact the supply chain, he said. Specifically, lack of depth and competition among suppliers is hampering cost and quality.

“For example, today, 90% of our missiles come from only three sources,” Espenshade said.

Shortages in energy, labor and raw materials are key drivers of supply-chain disruption. In particular, Espenshade said, environmental issues, climate change and natural disasters, global health and pandemic response, social unrest, trade and tariff policies, and political unrest and terrorism have resulted in increased cost and price inflation.

As a result of President Biden’s February Executive Order 14017 on America’s Supply Chains, the Department of Defense is actively building a deeper understanding of its supply chains and industrial base capabilities, with a holistic approach to resilience, Espenshade said.

But there are two key issues, said Kurt Wendelken, vice commander for NAVSUP.

“There are a limited number of suppliers, and we’re fighting obsolescence on a daily basis,” he said. “Both of these need to inform how we think about procurement and if cost is the right solution.”

Both Wendelken and Karen Fenstermacher, executive for strategic initiatives for NAVSUP, emphasized the “one Navy” concept when communicating with suppliers.

“The Navy is really 19 navies. We have very well-carved stovepipes in the Navy. But we want to have a single Navy voice to industry on the key challenges we’re facing and our strategies to work together,” Fenstermacher said.

This includes creating a conversation during the acquisition process about how the Department of Defense is going to sustain the systems it’s purchasing. “The acquisition policy is tremendously complex and voluminous,” Fenstermacher said. “One thing that’s exciting is the low-cost framework we’ve established.”

From an industry standpoint, supply chain has traditionally been thought of as a back-office function, but now has come to the forefront. “I see that both as a challenge and a great opportunity,” said Clark Dumont, senior director of global procurement for BAE Systems.

Panelists also emphasized the importance of including small businesses in the supply chain.

“We’re open for business; the money is there,” said Jimmy Smith, director of the Department of the Navy Office of Small Business Programs. He noted that last year, the Department of Defense spent $17.1 billion on small-business programs.

In particular, Smith mentioned the DoD’s Mentor-Protégé Program, a partnership between large and small manufacturing businesses.

“The government will give a large partner up to $3 million to help a small business partner, but in many cases I can’t find partners from industry to do this,” Smith said. “I encourage you to step forward and take this opportunity.”