Naval Information Warfare Center Atlantic Finds Several Benefactors for C4ISR Help

Kevin Charlow, head of expeditionary warfare at the Naval Information Warfare Center Atlantic: “We’re focused on trying to deliver capability to the fleet faster – by leveraging our exercise and prototype efforts.” Lisa Nipp

NATIONAL HARBOR, Md. – As head of expeditionary warfare at the Naval Information Warfare Center Atlantic, Kevin Charlow constantly is on the lookout for ways to share good results with as many potential users as possible.

“We’re focused on trying to deliver capability to the fleet faster – by leveraging our exercise and prototype efforts,” Charlow said during a May 7 interview at Sea-Air-Space 2019.

To that end, Charlow pointed to a recent case involving a precision navigation unit developed for a U.S. Special Operations Command (SOCOM) combat craft. It turned out that the Marine Corps had a need for a similar unit, for use in its Amphibious Assault Vehicles (AAV).

“We were able to take that integrated navigation and control capability – one of our SOCOM projects – and leverage that with the Marine Corps AAV,”

Charlow said.
“Basically, one sponsor funded a solution we’re now sharing with another, and
we have a potential win for the warfighters.”

> *“Pressing forward, we want to deliver C4ISR, and its system and engineering services and solutions, to our major sponsors.”*
>
> *Kevin charlow*

The Marines are testing
the system now in Charleston, South Carolina, harbor.

“Pressing forward,
we want to deliver C4ISR [command, control, communications, computer,
intelligence, reconnaissance and surveillance], and its system and engineering
services and solutions, to our major sponsors,” Charlow said.

The Navy, Marine
Corps and SOCOM are primary benefactors, but the Naval Information Warfare center
has helped the U.S. Air Force and U.S. Army as well.

Besides
advances in development of C4ISR prototypes, the center has awarded some $9
million in funding for 20 innovation projects for fiscal year 2019, which began
Oct. 1. Its engineers also built and installed a more robust firewall in the
Marine Corps’ SIPR (secret internet protocol router) network. The center was
able to fulfill an urgent need for the Marines within 10 months.

Nation’s Sealift Struggling, but Gaining Attention

Panelists at the Strategic Sealift discussion on May 7 at Sea-Air-Space 2019 talk about maintaining capability overseas. Charles Fazio

NATIONAL HARBOR, Md. – The nation’s strategic sealift has languished for too many years, a panel of experts told an audience May 7 at Sea-Air-Space 2019. And the panel, representing the military and civilian sea services, told the morning program attendees that the time for revitalizing sealift is now.

Countering the somewhat bleak picture they drew, they all expressed optimism with the fact that the issue is finally garnering the attention it deserves.

“We are facing one of the greatest maritime challenges in U.S. history,” said Kevin Toharsky, the associate administrator of the U.S. Maritime Administration, who moderated the panel. “The good news is the sea power we need … is back on the radar screen.”

Toharsky outlined the significant decline in the number of U.S.-flagged merchant ships, which meant the loss of jobs for mariners. The commercial fleet is

essential to the nation's commerce and national security, he said. Commercial cargo of fuel and goods rely on it, as does the military. In contrast, potential adversaries like China are bolstering their maritime industries — and their world presence in the process, he said.

"I'm encouraged by the greater awareness … and the conversation about the problem," said Coast Guard Rear Adm. John Nadeau, who is assistant commandant for prevention policy.

Resolution, however, "won't be easy," Nadeau said. "The material condition [of the merchant fleet] didn't happen overnight and won't be corrected overnight."

Ensuring that the parties involved — including military and commercial stakeholders — are striking the right partnerships, engaging in transparency and carrying out open and frank dialogues, will set the nation on the right track, Nadeau said.

"We need industry support," said Erica Plath, the Navy's director of strategic mobility, as she described the Navy's plans to modernize its fleet of deep-sea transports through the acquisition of both new and refurbished older vessels.

Chris Thayer, director of ship management at Military Sealift Command, alluded to a

downward trend in
available sealift capacity during the past two years.

The command is
implementing a “robust effort” to restore readiness that would require a
holistic approach to address aging ships and construction and refurbishment
efforts as well as crew-training requirements.

Capt. Christian Spain, vice president of government relations for the American Maritime Officers Union, said revitalization is essential if the nation intends to address the current shortage of 1,800 merchant seamen.

“It doesn’t affect
sealift at the initial [point],” Spain said. “But at four to six months, it
does.”

Similar to submarines, merchant ships require two crews that rotate sea tours, Spain said. The crew shortage figure has been steady since 2013, he said, but would increase to 2,000 within the next two to three years if not addressed.

“The time is now,” Spain said.

Indo-Pacific Policy More Complex Than Only China and Russia

Panelists discuss the complexities of a region dominated by

two near-peer superpowers but also full of friendly nations.
Seapower / Victoria Bottlick
NATIONAL HARBOR, Md. – As the nation grapples with striking a balance between competing with great power challenges and preparing for the possibility of conflict, the Indo-Pacific region poses perhaps the most significant challenge, Dr. Mara Karlin believes.

Karlin, director of strategic studies at the Johns Hopkins School of International Studies, made that observation as she introduced a panel of four military and civilian government experts, each of whom plays a key role in formulating related policies in the region.

It stands to reason that each panelist recognized the increasing threats posed by China and Russia. Still, they noted that the matrix is considerably more complicated. Eyes cannot be focused on the two large superpowers at the expense of other friendly nations in the region. Also, while China and Russia loom as potential adversaries, it is imperative that the U.S. and its partners work as closely together with them on areas of common interest.

Representing the Coast Guard and Marine Corps, Vice Adm. Linda Fagan and Gayle Von Eckartsburg discussed how each respective service shares a forward-deployed mission that makes their presence essential in the Pacific. Both Fagan and Von Eckartsburg emphasized that neither service is a “garrison force.”

“The Coast Guard has never been more relevant,” said Fagan, the service’s Pacific Area commander. “The demand for the signal we bring into the region has never been higher.”

Besides watching Chinese and Russian activities and fostering goodwill among allies, Fagan placed equal importance in “modeling legitimate behavior,” so that “China can see what a responsible Coast Guard looks like.”

If the Chinese can learn from the U.S. Coast Guard how to conduct, for example, more effective search-and-rescue operations, so be it.

Von Eckartsburg, director of the Marine Corps Pacific Division office of Plans, Policy and Operations, described a “persistent forward force.” Of the roughly 40,000 Marines now deployed around the world, the vast majority is west of the International Dateline, she said.

“We’re in a constant state of motion, leveraging presence to maintain readiness at the same time,” Von Eckartsburg said.

Joel Szabat the Assistant Secretary of Transportation for Aviation and International Affairs, discussed the three most important “pillars” of stability in the region – economy, governance and security.

“We need to remember that this is not about containing or encircling any one country,” Szabat said. “We want to help people, regardless of who our competitors are.”

Security commitments with U.S. allies would assure the free flow of commerce, Szabat said. The nation faces significant related challenges in this arena, he believes. U.S. sealift is old and needs to be recapitalized, he said. The size of the U.S. merchant fleet, which handles much of the military’s sealift capability, is good enough for small-to-medium operations.

“We don’t have enough mariners, or U.S.-flagged merchant marine,” Szabat said.

Walter Douglas, who heads the State Department Bureau of East Asian and Pacific Affairs, cited an Asian Development Bank statistic that states the region needs an estimated $1.7 trillion in investment to sustain healthy economic growth.

“There’s nowhere near that amount of money available in one state,” Szabat said.

The emphasis, then, would be to have “money centers” and corporations step in with “transparent” investments. The government and private sectors would ensure that

such funding would not be subject to the troubles endemic to secret
deals.

“That money gets
spent in the wrong places,” Szabat said. “We can’t have that. We need open
governance. We have to see [to it] that investment laws are transparent.”

Equally
imperative, Douglas said, is working to ensure that investments are evenly
distributed. While putting money into traditional stable partners like Japan,
Australia and Singapore would remain important, more could be done to help open
emerging economies. He said that Vietnam, for example, badly wants help
developing its infrastructure – from anywhere but China.

Coast Guard Foreign Military Sales Boosting Standing With Partner Nations

NATIONAL HARBOR, Md. – The Coast Guard’s foreign military sales program is fostering good relations with partner nations, increasing maritime governance and saving money, according to the program’s director, Tod Reinert.

Speaking before a show floor audience on May 6 during Sea-Air-Space 2019 at National Harbor, Maryland, Reinert also

described how foreign sales of aging Coast Guard vessels is keeping U.S. vendors busy with replenishment and refurbishment contracts — all necessary to ensure that the new owners have hale platforms with which to pursue their missions.

The foreign military sales program is "extending production lines, sharing overhead costs and [sustaining] a robust vendor base," Reinert said.

The Coast Guard has delivered more than 540 "assets," worth more than $1 billion, to 75 partner nations during the past 20 years. The list of benefactors is long. Bangladesh, Vietnam, Yemen and Saudi Arabia got response boats. The Philippines received riverine boats, and Tunisia got near-shore patrol boats. U.S. Central Command stands to take possession of retired medium-response boats as well.

Recipient nations stand to take ownership of decommissioned high-endurance cutters, Island-class patrol boats, medium-endurance cutters and patrol boats — in a time frame generally beginning sometime next year and spanning into 2024, Reinert said.

These countries must rely upon their acquisitions to conduct search-and-rescue, maritime safety, law enforcement and national defense missions akin to those the Coast Guard performs every day — the cornerstones of its mission to protect the

nation’s 95,000 nautical miles of coastline, Reinert said.

Modularity the Key to Keeping Ship Systems in Shape, Says Mercury Systems

NATIONAL HARBOR, Md. — Like every other entity that relies upon technology to do its job, the Navy has to constantly contend with systems that fail or become outdated. When such systems are situated on ships that could be situated anywhere in the world, the challenge potentially becomes even more acute.

Andover, Massachusetts-based Mercury Systems thinks they have the answer to the conundrum. Building on the company’s years of experience working with numerous Navy programs, most notably the Aegis Combat System, they believe that a modular approach offers the best method of ensuring seamless functionality. With that, Mercury Systems introduced its second-generation Intel Xeon scalable processors at Sea-Air-Space 2019.

“Commercial
products go obsolete, and technology changes too fast,” said Rick Studley,
chief of technologies for Mercury Systems Trusted Missions Solutions in
Chantilly, Virginia, during a Monday interview.

Mercury Systems
provides hardware on nearly every surface combatant big-deck ship and submarine

in the Navy. With its modular approach, the company's products allow for switching out old or broken components for new ones in complex systems without changing shock isolation, power or cooling already in place.

"We can abstract applications from underlining hardware, making the technology insertion much easier," Studley said.

Moreover, with the presence of multiple virtual machines, systems can run on smaller sets of hardware – saving valuable shipboard space. This is done by running "virtual twin" systems in parallel with existing ones, for example, on a system like Aegis. The "twin" systems can take passive taps from the actual system – data from sensors, with the weapon system's actual code. In simplistic terms, the "twin" can integrate with the actual server. Over time, tactical servers, which are bare-metal and redundant, would evolve into fully virtualized systems, Studley said.

"The goal is to move away from redundancy and toward resiliency, so that no single element in the system is so important that you can't afford to lose it [and still function]," he said.

[and still function]

"It's totally modularized and virtualized. You accept that failures are

going to happen, but
your machine keeps working," Studley said. "The system heals itself around
these failures."

The process allows
for greater sharing of technology across platforms, applications and systems,
Studley said. The Navy would save money by having an infrastructure that is
easily upgraded, managed and deployed, he added.

Navy Looks to Enlist Industry in All-Hands Cybersecurity Mission

NATIONAL HARBOR, Md. – If the U.S. Navy hopes to thwart cyber attackers, the sea service will need industry's help. Capt. Ann Casey intends to garner as much of this outside help as possible.

"We want the ability to do a more advanced hunt," Casey said May 6 during an interview at the Navy League's Sea-Air-Space conference.

As director of information and capability at the Fort Meade, Maryland-based
Fleet Cyber Command, Casey intends to find experts attending the show that
would help "look inside our own networks at a more advanced level than we

currently do."

Industry hopefully can provide assistance in fostering advances in artificial intelligence (AI) and machine learning (ML), Casey said.

The processes involve "getting a machine to do some computations that can assist users," Casey said. "Our sensors get a large amount of data. We want machines to parse that data and tell us what's important."

> *"We want the ability to do a more advanced hunt."*
>
> *Capt. Ann Casey*
> *director of information and capability, Fleet Cyber Command*

Casey's role is an integral part of a U.S. Defense Department-wide effort, spearheaded by the newly created Joint Artificial Information Center. The effort entails seeking protections for all the Navy's cyberspace operations, including communications systems. The process involves a bit more than merely stopping hackers, she said.

"If you're using McAfee or Symantec [on a personal computer], you don't care who's hacking you – you just want it to stop," Casey said.

The Navy, on the other hand, cannot take such a simplistic approach.

"We care about tactics, techniques and procedures – in other words, who's hacking us," Casey said. "We're looking for ways

in the future to
prevent it.”

Casey’s shop also is part of the effort to conduct offensive cyber
operations, should it be ordered to do so.

“The best dialogue I
can have would be if somebody from industry is presenting a new approach,
particularly in cybersecurity,” Casey said. “After having a conversation, I
would go back and engage our entire community. On an as-needed basis, we could
invite the contractor to come back and speak to us – sometimes in a classified
arena.”