Admiral on EMALS and AAG Programs: ‘It Works’

Chief Aviation Boatswain’s Mate (Equipment) Louis Mountain Jr., from Seat Pleasant, Maryland, assigned to USS Gerald R. Ford’s (CVN 78) air department, signals the EMALS to launch during no load testing on the ship’s flight deck. *U.S. NAVY / Mass Communication Specialist 3rd Class Zachary Melvin*

A Navy admiral says that despite reports to the contrary, the Electromagnetic Aircraft Launch System and Advanced Arresting Gear systems aboard the USS Gerald R. Ford (CVN-78) are working just fine.

Rear Adm. Shane G. Gahagan, program executive officer for tactical aircraft programs (PEO-T) at Naval Air Systems Command, said Monday, April 4 at Sea-Air-Space that the system had achieved 8,500 “cats and traps” on the Ford over the past two years.

The EMALS system has struggled with reliability issues over the years, but Gahagan insisted that it is performing well today.

“It works,” Gahagan said. “I read in the press … that it doesn’t work. It works day in and day out with cats and traps, and now it’s like every other program: How are we going to sustain it for the fight we need?”

He said the EMALS and AAG systems have a “lot of great capability” and that Sailors “love it.”

New Ship-to-Ship Cargo UAS Could Become Program of Record Soon

The Skyways UAV, taking off from aircraft carrier USS Gerald Ford. *SKYWAYS*

NATIONAL HARBOR, Md. – Naval Air Systems Command is testing out a new unmanned cargo delivery platform that can transport small amounts of cargo between Navy ships, and a NAVAIR official said Wednesday he expects it to become a program of record soon.

A team at NAVAIR was able to take the Skyways unmanned aerial vehicle and demonstrate it aboard the aircraft carrier USS Gerald Ford (CVN-78) after just a few months, and the Navy is highly interested in going beyond that, Tony Schmidt, director of rapid prototyping, experimentation, and demonstration, said at the Navy League's Sea-Air-Space expo in National Harbor, Maryland.

Schmidt said his team was initially approached by Military Sealift Command, who had discovered that about 80% of the parts they were transporting by helicopter were less than 10 pounds.

"So we said let's see if we can use a Group 2 or 3 UAS to transfer parts back and forth," Schmidt said.

Despite having very little money or resources, Schimdt's team met with industry to identify possible solutions and settled on the Skyways UAV. They delivered the prototype in October 2020. Once Rear Adm. John Meier, commander of Naval Air Force Atlantic, caught wind of the program, he asked them to deliver the aircraft for testing aboard CVN-78 just three months later.

Meier said the team missed that deadline by only a week. “Pretty awesome,” he said.

Interest in the effort only grew after that. In July, the team took the UAV on a ship-to-ship mission from the USS Bainbridge (DDG-96) to the USNS Joshua Humphreys (T-AO-188). In recent weeks, they’ve been in conversations with Navy officials and Schmidt said he is “pretty sure it’s going to get picked up as a program of record.”

While the new program won’t necessarily use the Skyways drone, it will take lessons from it. The team is looking at a delta wing design instead of a standard wing size, and they will experiment to see what works best in a carrier environment, as well as determine how to extend the range of the aircraft.

Navy Must ‘Expand Our Operational Reach’ Through Tactical ISR

Vice Adm. Scott Conn, deputy chief of naval operations for warfighting requirements and capabilities says the Navy is facing challenges in finding a tactial ISR advantage. *NAVY LEAGUE / Lisa Nipp*

NATIONAL HARBOR, Md. – The Navy no longer has a monopoly on key technologies as it did at the end of the Cold War and now must turn to tactical intelligence, surveillance and reconnaissance to gain an advantage over adversaries, a top Navy official said Wednesday.

The key challenge the Navy faces in the coming years is

finding that advantage at the tactical level with communications and unmanned assets, Vice Adm. Scott Conn, deputy chief of naval operations for warfighting requirements and capabilities (N9), said during a panel discussion at the Navy League's Sea-Air-Space expo in National Harbor, Maryland.

"When I say the tactical level, I'm talking at the numbered fleet level, at the task force level, at the task group level," Conn said. "The world is a different place. At the end of the Cold War, there was an anomaly in history that the U.S. had a monopoly on the key critical technologies, and that's no longer the case."

This is particularly true in the areas of range and precision of strike weapons, he said.

"Because of that, we need to expand our operational reach – our ability to sense, make sense and act," Conn said.

Part of accomplishing that is through better communication and initiatives like Project Overmatch, and another part is using unmanned systems in the air, on the surface and in the sea to identify warfighting advantages at the tactical level.

It is of critical importance for the Navy to master these areas, Conn added.

"This is not about in times of crisis, competing – this is about winning," he said.

CH-53K Program 'Actively

Working With Israel' to Send 18 Helos by Mid-2020s

U.S. Marine Corps Maj. Gen. Michael S. Cederholm flies the CH-53K "King Stallion" at Marine Corps Base Camp Lejeune, North Carolina, June 12, 2021. U.S. MARINE CORPS / Cpl. Yuritzy Gomez

NATIONAL HARBOR, Md. — The U.S. government has approved a sale of 18 CH-53K heavy-lift helicopters to Israel, and the program hopes to get them to Israel by the mid-2020s, according to an official.

The U.S. State Department cleared the $3.4 billion sale just a few days ago. Col. Jack Perrin, program manager for H-53 helicopters (PMA-261), said Tuesday during the Navy League's Sea-Air-Space expo in National Harbor, Maryland, that while it depends on the eventual contract with Israel, "I believe it'll be the 2025-26 timeframe before they actually get delivered to Israel.

"But again the schedule is in flux until we get on contract," Perrin added. "We are actively working with Israel on defining that and getting us all to an agreeable place."

The helicopters will replace some of Israel's fleet of CH-53D Yasur aircraft, some of which are up to 50 years old. The contract covers 12 CH-53Ks with an option for six more.

Bill Falk, manager of the CH-53K helicopter program at Sikorsky, said he was "very excited" that Israel had selected the CH-53K.

Asked whether the country could buy more, Perrin said the buy was limited to 18, but Israel can always request more.

"If they would like more, we'd have to go back and talk to Congress about allowing them to purchase more," Perrin said.

Some lawmakers have bristled at the sale of arms to Israel after the country's bombardment of Gaza and settlements in the West Bank. Multiple Democrats tried unsuccessfully to block an arms sale to Israel back in May that included Joint Direct Attack Munitions (JDAMs), which may have been used in strikes on targets in Gaza in May that resulted in the deaths of around 200 Palestinians over the course of a week, according to reports.

Israel's fleet of CH-53Ds are used for long-range heavy assault and insertion of special operations teams, among other missions.

UISS Should Achieve IOC by Summer's End: Official

A developmental, early variant of the Common Unmanned Surface Vehicle (CUSV) autonomously conducts maneuvers on the Elizabeth River during its demonstration during Citadel Shield-Solid Curtain 2020 at Naval Station Norfolk. U.S. NAVY / Mass Communication Specialist 2nd Class Grant G. Grady

NATIONAL HARBOR, Md. — The Navy has wrapped up initial operational test and evaluation (IOT&E) for the Unmanned Influence Sweep System (UISS) and expects the platform to be ready for fielding by the end of this summer, according to an official.

Capt. Godfrey Weekes, program manager for Littoral Combat Ship mission modules (PMS-420), said Tuesday at the Navy League's Sea-Air-Space expo in National Harbor, Maryland, that initial operational capability (IOC) for the platform is the fourth quarter of fiscal 2021, which ends Sept. 30, 2021.

The UISS platform is designed for the LCS's mine countermeasures mission package (MCM). It "consists of a mine countermeasures unmanned surface vehicle (USV) and a towed minesweeping payload for influence sweeping of magnetic, acoustic and magnetic/acoustic combination mine types," according to a Navy statement.

The UISS's Minehunt USV is currently in contractor verification testing. Low-rate initial production of that platform should begin sometime in late fiscal 2022, Weekes said.

The MCM mission package itself is scheduled to achieve IOC in the fourth quarter of fiscal 2022.

Official: Navy Opposed to More Super Hornets Because Aircraft May Not Be Viable in 2050s

Rear Adm. Andrew Loiselle, third from left, spoke on an aviation panel on Aug. 3. *NAVY LEAGUE / Lisa Nipp*

NATIONAL HARBOR, Md. – A top Navy air warfare official said Aug. 3 the service opposes the addition of F/A-18E/F Super Hornets to the budget – which Congress wants to do this year as it done in many previous budgets – because the new buys would take the aircraft deep into the 2050s, when it would be no longer viable.

As they have done for years, lawmakers are once again seeking

to add more F/A-18E/F Super Hornets to the Department of Defense's budget to help close a gap in strike fighter capability. Chief of Naval Operations Adm. Michael Gilday said Aug. 2 at the Navy League's Sea-Air-Space 2021 the Navy is opposed to this move, and the next day Rear Adm. Andrew Loiselle, director of the air warfare division (N98), said Gilday opposes it because the Navy doesn't want fourth-generation fighters that many years into the future.

He pointed out that the last Super Hornet to be bought under this proposal would last 30 years, which "takes us out to 2055. There isn't a lot of analysis out there that supports fourth-generation viability" that far into the future, Loiselle said.

Instead, the Navy is focused on continuing F-35 buys and managing the service lives for current Super Hornets, he said.

Additionally, Loiselle addressed what he described as incorrect interpretations that the Navy is reducing its F-35 program of record by decreasing the number of F-35s in an air wing to 14.

"Some interpreted that as a reduction in the program of record," he said. "That is not the case. There has been no change to the program of record for the F-35."

Navy Implements New Process to Standardize Development of

Autonomous Unmanned Systems

A Knifefish Unmanned Undersea Vehicle (UUV) transits the Massachusetts Bay at the completion of a mission during an operational test conducted by members from Operational Test and Evaluation Force (OPTEVFOR). *U.S. NAVY / Mass Communication Specialist 1st Class Brian M. Brooks*

NATIONAL HARBOR, Md. – The U.S. Navy is implementing a six-phase process to improve and standardize the development of autonomous unmanned systems, according to an official.

Pete Small, program manager for unmanned maritime systems (PMS 406) said Monday at Navy League's Sea-Air-Space Expo in National Harbor, Maryland, that this process "represents the future of autonomous capability."

"From day one, we know these platforms need to be upgradeable and interoperable," Small said, noting that the Rapid Autonomy Integration Lab (RAIL) was key to achieving that.

To accomplish this, the program starts with a "software factory" approach, where software is rapidly developed, tested, and certified for autonomous capabilities.

The second phase is "DevSecOps," which are a set of automated software tools, services, and standards that allow programs to develop and deploy applications securely.

The third phase is peer groups, who identify autonomy gaps, requirements, and performance metrics.

The fourth phase is Common Control, which standardizes vehicle planning and control across platforms. That is followed by Unmanned Maritime Autonomy Architecture, which standardizes autonomy interfaces.

The sixth phase involves making data available to support artificial intelligence and autonomy development.

LCS Program Office Delivered 5 Ships and Progressed on 6 Others During Pandemic

The Independence-variant littoral combat ship USS Mobile (LCS 26) arrives at its new homeport in San Diego for the first time in June 2021. *U.S. Navy / Chief Mass Communication Specialist Rosalie Chang*

NATIONAL HARBOR, Md. – The Littoral Combat Ship program office was able to deliver five ships and begin early construction on six others during the 17 months of the COVID-19 pandemic, a program official said Monday.

Howard Berkof, deputy program manager for PMS 501 (LCS), said at Navy League's Sea-Air-Space expo in National Harbor, Maryland, that the office was able to progress with shipbuilding despite the challenges posed by the pandemic.

"We have not slowed down," Berkof said.

Ever since shutdowns began in March 2020, the program has delivered LCS-19, LCS-22, LCS-24, LCS-26 and LCS-28. Additionally, the program began fabrication on LCS-31, LCS-34 and LCS-36, and laid keels for LCS-29, LCS-32 and LCS-34.

The program also conducted acceptance trials and live fire test and evaluation.

Berkof said the average cost of a block buy LCS is 20% below the congressional cost cap, and production hours from the first block buy of ships to the most recently delivered have dropped by 35%.

He added that he has seen LCSs delivered with increasing levels of completion and fewer open trial cards.

Gilday: Large Scale Exercise 2021 Will Provide ‘Path to the Future’ for U.S. Navy

Gilday, second from left, appeared on the Tri-Service Maritime Leadership panel that kicked off Sea-Air-Space 2021. *NAVY LEAGUE / Lisa Nipp*

NATIONAL HARBOR, Md. — The Navy’s massive Large Scale Exercise 2021 kicks off this week and the sea service’s top officer said Monday the exercise represents a “path to the future” for the service.

It’s the “biggest exercise we’ve done in a generation,” and the Navy will benefit from its lessons for years to come, Chief of Naval Operations Adm. Michael Gilday said while speaking at the Navy League’s Sea-Air-Space Expo in National Harbor, Maryland.

The exercise will involve 25,000 sailors and Marines and will span 17 time zones in the Pacific Ocean, Atlantic Ocean, and Mediterranean Sea. The exercise begins Aug. 3 and will finish on Aug. 16.

While the Navy plans to test warfighting concepts like it would with any exercise, one of the main purposes of the event is to put Sailors and Marines in a two-week live virtual constructive exercise, Gilday said.

“At an individual level, it allows sailors and combatant

commanders" to experiment with warfighting concepts and generate lessons learned, he said.

"That's the key to this," he said. "It's to take this warfighting concept, which is quite frankly going to be foundational to everything that we buy, everything we invest in, and it's going to inform how we're going to fight."

The exercise provides a rare opportunity where service members can train together regardless of their role.

"We think this constructive training is really a path to the future for us," Gilday said. "You can imagine that sailors and lieutenant commanders and their COs can conduct integrated training – air wing and submarines and surface ships and cyber units. Any time they want thousands of repetitions, we can learn from that, and bring back those lessons to how we fight."

Big Tech in a Small Package: Marines Experiment With SkyRaider UAS

Information Systems Technician 2nd Class Andrew Cleary, assigned to Naval Mobile Construction Battalion 1, pilots a SkyRaider UAS during a field training exercise at Camp Shelby, Mississippi. U.S. NAVY / Mass Communication Specialist 1st Class Caine Storino

With the wars in Iraq and Afghanistan largely in the rearview mirror and a growing emphasis on the Pacific region and littoral operations, the U.S. Marine Corps is committed to

returning to its amphibious roots. And that includes a major restructuring of the service itself that involves getting lighter and more agile.

One of the ways the Marines are doing that is by embracing new technology – such as drones small enough to fit in a rucksack. And one of the new unmanned aircraft the service is experimenting with is SkyRaider – a platform that is small in stature but aims to make a big impact and show that an increasing number of missions can be done by smaller and more technologically advanced equipment.

Check out the digital edition of the September *Seapower* magazine and other past issues here.

The Marines have started to ramp up their procurement of the SkyRaider. Manufacturer FLIR Systems received a $10 million contract for dozens of the drones. SkyRaider has long-range, high-resolution electro-optical/infrared (EO/IR) imaging sensors, and it can also be used for delivering external loads, asset extraction and "other specialized missions," according to a June 30 FLIR Systems statement announcing the contract award.

"The SkyRaider vertical takeoff and landing small unmanned aircraft system [sUAS] was procured to fill a capability gap," the Marine Corps said in a statement, noting that the need for SkyRaider came out of the Small Unit Remote Scouting System operational requirements document and a series of Urgent Universal Needs Statements.

> *"The SkyRaider vertical takeoff and landing small unmanned aircraft system [sUAS] was procured to fill a capability gap."*
>
> *Marine Corps statement*

"The sUAS will be primarily supporting the ground combat

element, specifically our infantry and our light armored units by providing improved electro-optic and IR capabilities, along with an ability to carry light payloads within size, weight and payload restrictions," the statement reads. "As we procure more systems, we plan to expand usage to other units."

The Marine Corps plans to buy 71 systems in fiscal 2021, 60 in 2022 and 53 in 2023.

More Than Just a Drone With a Camera

David Proulx, vice president of product development for FLIR, told Seapower in an interview that while it may resemble a commercially available drone, this system has capabilities that go far beyond anything available to consumers.

For one thing, it has a robust operating envelope that can handle some of the more extreme environments that the Marines have to deal with, Proulx said.

"The Marines don't get to just deploy on nice, sunny days at reasonable altitudes," he said. "We had to build a UAS that can keep pace with their operations, tolerate winds at 50 miles per hour, fly up to 15,000 feet and tolerate precipitation."

Additionally, the SkyRaider is more than just a drone with a camera, he said.

Manufacturer FLIR Systems received a $10 million contract for dozens of the drones for the U.S. Marine Corps. U.S. NAVY / Mass Communication Specialist 1st Class Caine Storino

"Our customers, as their missions evolve from [intelligence, surveillance and reconnaissance] to resupply to providing aerial comms relays, they need something that can adapt to those missions," Proulx said. "We not only offer a range of payloads, but different operating envelopes."

He said the UAS is designed to operate without constant input

from an operator or even an active GPS signal. It can be autonomously launched and recovered on moving platforms.

SkyRaider is brand new – FLIR launched the drone at a conference just two years ago, and the UAS was in development for three years before that.

FLIR has been working on enhancements to the platform. For example, the company recently expanded its payload from 4.4 to 7 pounds.

"That may not sound like a lot from a manned aviation perspective, but for a small drone that can fit in a rucksack, it's important," Proulx said. "In terms of the cameras and optics it can carry, we're now talking about payloads where previously you would need a Group 2 or 3 UAS."

> *FLIR recently expanded SkyRaider's payload from 4.4 to 7 pounds. "That may not sound like a lot from a manned aviation perspective, but for a small drone that can fit in a rucksack, it's important."*
>
> *David Proulx, FLIR vice president of product development*

FLIR is also looking to make the UAS usable from the deck of a ship, primarily for use in littoral environments as opposed to the open sea. The SkyRaider could help a ship's crew get closer to a target or see around obstacles. It also can operate as a communications relay that provides over-the-horizon connectivity, essentially acting as a communications node in the sky.

Jonathan Wong, a policy researcher at Rand Corp., said the Marine Corps has been getting more creative in its use of small UAS.

Small UAS are "a relatively new technology that they know has broad military utility, but they're not sure how," Wong said. "They could have taken a traditional acquisition route of

exhaustively figuring out what they need and then procuring that solution at scale. Instead, they bought a wide range of platforms in relatively small quantities, gave them to Marines, and said, 'Here, figure out what you can do with this.'"

The Marines have experimented with these UAS, hanging radios from them to serve as retransmission nodes or even using them to support light armored recon missions, Wong said.

"That iterative approach is evident in the force redesign efforts that [Marine Corps Commandant Gen. David Berger] is pursuing," Wong said. "He calls out sUAS specifically, because the Marine Corps is convinced that they can be a force multiplier, especially for disaggregated or distributed units. However, the Marine Corps also sees that the threat environment demands that sUAS be more lethal and more robust and autonomous in terms of being able to operate in a communications-degraded environment."

He added that SkyRaider appears to be a step in that direction. While the drone is not lethal, it can do things that previous platforms in its size and weight category could not do.

"It can carry a payload. It can operate autonomously," he said. "The current contract that the Marine Corps has signed with FLIR isn't huge – it calls for dozens, not thousands, of systems. But it strongly indicates that the Marine Corps is continuing to iterate in this technology space."