**Capt. Shea S. Thompson**
**Commodore, Surface Development Squadron One (SURFDEVRON 1)**

Capt. Shea S. Thompson. *U.S. NAVY*

*A native of San Marcos, California, Thompson received his commission from the U.S. Naval Academy in 1997. His sea tours included USS George Philip (FFG 12), USS Cape St. George (CG 71), and USS John Paul Jones (DDG 53). He served as executive officer and then commanding officer of USS Chafee (DDG 90).*

*Subsequently he commanded USS Bunker Hill (CG 52).*

*Thompson's tours ashore include Naval Postgraduate School where he earned a Master's Degree in Financial Management; Ballistic Missile Defense Syndicate Lead at Tactical Training Group Pacific; Ballistic Missile Defense Training Officer at U.S. 3rd Fleet; Joint Interface Control Officer at Headquarters U.S. European Command (J3); C4ISR Operations Branch Chief at U.S. Strategic Command, Joint Force Component Command Global Strike (J6); N8/9 Branch Head Headquarters Surface and Mine Warfare Development Center.*

*Thompson discussed the roles of Surface Development Squadron One with Senior Editor Richard R. Burgess. Excerpts follow.*

**How did your background prepare you for your current command?**

**THOMPSON:** Actually, my background prepared me quite well. Following my command tour on USS Chafee, I had the privilege of being assigned to the Surface and Mine Warfighting Development Center [SMWDC] where I served as N8/9 Branch Head for Future Requirements & Resources and Experimentation from 2016 to 2019. During that time, I had significant exposure to the acquisition and budgeting process as well as requirements generation. SMWDC's Warfare Improvement Programs fell under my portfolio for those three years. We produced the surface fleet's Integrated Prioritized Capabilities List for surface warfare Integrated Air and Missile Defense, Surface Warfare, Amphibious Warfare and Mine Warfare. That experience really benefited me as I became intimately familiar with the capability gaps across all those mission areas.

I've worked with a number of stakeholders to include the technical community on how we would get at closing those gaps and back in 2017, we recognized unmanned systems had a role to play in closing a number of gaps across those mission areas. The beauty was, as I also wore the N9 hat, I was able to partner with industry and experiment with new and innovative

capabilities that helped close those gaps. For example, I personally worked closely with industry on the first-ever remote operation of Sea Hunter [unmanned surface vessel] from a surface combatant to validate that capability. So, the learning curve of employing and operating unmanned platforms with and from manned surface forces wasn't that steep for me as I came into this job.

In fact, when I took command of SURFDEVRON, I was encouraged by the progress I saw had been made since my time in SMWDC and my time taking command here. We've come a long way since 2017 [with] the current and future capabilities and possibilities that exist with manned and unmanned teaming, how that will enhance the lethality of the surface force going forward.

**How many personnel comprise your command?**

**THOMPSON:** On staff here at SURFDEVRON I have 13 Officers, 58 enlisted, and one civilian permanently assigned. USS Michael Monsoor (DDG 1001) and USS Zumwalt (DDG 1000) each muster about 180 personnel. Obviously, I'm eagerly awaiting delivery of USS Lyndon B. Johnson (DDG 1002) when that day comes. USV Division 1 was formally established during the SURFDEVRON 1 change of command ceremony on May 13 and is now commanded by CDR Jerry Daley. That squadron has actually grown to 103 Sailors comprised of 12 officers and 91 enlisted. Those folks are there to provide dedicated support to USV operations.

Cmdr. Jeremiah Daley, commanding officer, Unmanned Surface Vehicle Division One, Secretary of Defense Lloyd J. Austin III and Capt. Shea Thompson, commodore, Surface Development Squadron One, tour USV Sea Hunter at Naval Station Point Loma, California, Sept. 28. *DOD / Chad J. McNeeley*

**How has the Chief of Naval Operations' new Navigation Plan influenced the focus of your work?**

**THOMPSON:** The CNO's Navigation Plan is the guiding framework for my efforts for USV experimentation and fleet integration. In there, it talks about [how] unmanned surface platforms will increase the fleet's capacity for distribution and expand our intelligence, surveillance and reconnaissance advantage, add depth to our missile magazines, supplement logistics, and enhance fleet survivability. This transition will gradually rebalance the fleet away from exquisite manpower-intensive platforms for smaller, less expensive yet lethal platforms. The capacity goal, if I remember correctly, is approximately 150 USVs.

That plan also emphasizes the importance of the

manned/unmanned teaming in future fleet operations. We're really getting at that. For example, one of the concepts we're working on is further distributing the force through manned and unmanned teaming. Your typical surface action group, or SAG, consists of three destroyers. Right now, we're trying to reimagine that traditional SAG. Instead of three manned DDGs making up that SAG, we're exploring options to have one DDG as the center of a SAG teamed up with a number of unmanned surface vessels that would be one SAG. That also frees up the other two destroyers to create other manned/ unmanned SAGs and further distribute the force and enhance the capability and lethality of those SAGs as well. Honestly, I envision a future where this is the standard SAG construct and my team here is moving out full speed on proving out that concept.

**What kind of experiments have you been working on with the Zumwalt-class DDGs?**

**THOMPSON:** I would say that for the class, it's been less about experimentation and more about class capability validation. That's not to say we haven't been leveraging those platforms for experimentation efforts.

I know you're aware that Zumwalt is currently employed in the Indo-Pacific region, and she is working on fleet integration and participation in fleet exercises. We're pushing her forward to learn how the ship can best operate and integrate with other fleet assets and how this integration is done at the tip of the spear. You can only do so much learning pierside. It is important to accelerate her introduction into fleet exercises and this learning is going to inform future employment of the class. Prior to this employment, Zumwalt went through your standard workups for employment, conducting basic training certification events and participating in the Surface Warfare Advanced Tactical Training, otherwise known as SWATT.

Earlier this year, Monsoor participated in an ASW

[antisubmarine warfare] exercise known as SCC Mini-wars, and she did that with coalition partners and the USV Sea Hawk in the Hawaiian op area. Monsoor also recently participated in the first RIMPAC exercise for the class where, again, she focused on force integration and continued her work with unmanned vessels in that exercise.

**Do you expect the Zumwalt DDGs to return to your squadron after their modification with the Conventional Prompt Strike capability?**

**THOMPSON:** They're going to come back to me following deployment and they're going to be with me for the foreseeable future. The future plans for the class remain in work. We are gathering data right know regarding Zumwalt's current deployment and Michael Monsoor's RIMPAC support. We're going to leverage that data and lessons learned on any future deployments to include how to maintain and sustain the platform in an operational environment when deployed forward. I will say the best way to continue learning and validating the existing capabilities and TTPs [tactics, techniques and procedures] for the class is to keep them underway and employed, whether that's with 3rd Fleet or 7th Fleet.

**What kind of things are you doing with the two Overlord USVs and what are you planning in the future once the other two Overlord USV are on strength?**

**THOMPSON:** All four of the USVs that I own right now were involved in RIMPAC: Sea Hunter, Sea Hawk, Nomad and Ranger. Their involvement in RIMPAC really helped determine and define how the capabilities of the unmanned fleet will integrate with our manned ships. RIMPAC was an excellent arena to showcase the USVs' usefulness in electronic warfare, data collection and how warships can leverage USVs in the high-end fight. In every exercise we do from SCC mini wars to SWATT to RIMPAC, the objectives being accomplished form the building blocks of realizing the manned/unmanned concept. A USV tracking a

submarine using its ASW payload or providing target-quality tracks to a surface combatant – think EW [electronic warfare] payloads, sensor suite, etc. – we're proving the USV is value added in providing our warships with more flexibility in meeting the mission.

**How about your experimentation with Sea Hunter and Sea Hawk USVs?**

**THOMPSON:** They each bring different payloads and capabilities. And so, we're working with those to further validate our concepts. For the broader unmanned campaign plan, Surface Development Squadron One is developing those concepts in the playbooks, in the TTPs and we're doing that with other stakeholders. We're not doing that in a vacuum. I see those concepts and TTPs playing in the potential surface battles of tomorrow. The prototype USVs are being heavily leveraged to validate these concepts and TTPs. When the program of record USV does come online, we can quickly transition it into fleet operations. The goal to me will be for them to be embedded into fleet operations to further distribute the force, provide manned warships with target quality tracks and, also, for adjunct magazines.

One important note I think is worth mentioning is we're focused on autonomous USVs with a man-on-the-loop technology. That means that even though a USV may be in an autonomous mode while conducting a mission, it is always being monitored – including its health status – and at any time the man-on-the-loop, whether on board a ship or shore, can take direct control as required.

**Are there any specific accomplishments you want to mention with regard to the USVs or the Monsoor in RIMPAC?**

**THOMPSON:** Sea Hawk was out during the SCC Mini-Wars and did excellent work. She validated the value of her ASW payload. Not just here at the Echelon 5 level but all the way into the

Echelon 2 level. In the near future, we're participating in a fleet exercise that we'll explore how that capability supports our expeditionary capability and the Marine Corps' efforts on that front, too. The big ship-to-shore movement of USVs' C2 [command and control] nodes, officially we're working with PMS-406 to gain unmanned, unescorted, OTH [over the horizon] proof-of-concept testing.

For Monsoor, RIMPAC was really a test of the operational concepts and to gather insights about further employment for the class. She flexed her capabilities across all mission areas to include SUW, ASW, and air defense. She also conducted an experiment that consisted of launched employment and recovery of a UAV to enhance maritime surveillance. All four USVs that participated in RIMPAC demonstrated how they fit into the composite warfare commander concepts either attached to a destroyer or sent out on individual missions. It really helped to determine how the capabilities of the unmanned fleet integrate with our manned ships, with focus on ASW, EW, surface warfare, interoperability and transfer of control of those USVs between manned ships and ashore or vice versa.

Then-Cdmr. Shea Thompson gives remarks during the Surface Development Squadron One change of command ceremony in May. During the ceremony, Thompson relieved Capt. Jeffery Heames as commander Surface Development Squadron One. *U.S. NAVY / Mass Communication Specialist 2nd Class Diana Quinlan*

**With the Navy developing the Next-Generation Destroyer (DDG(X)) and the Large USV, are you actively engaged in providing feedback for development of those vessels?**

**THOMPSON:** Yes. As we worked fleet introduction for DDG 1000 class and the USVs, there are a number of lessons learned that can be applied to both the DDG(X) and LUSV, not just from a capability validation perspective but also from a maintenance and sustainment perspective. And so, those lessons are being shared across the enterprise. The LUSV program is in the prototyping stage while we develop and demonstrate the technology for critical subsystems, through a comprehensive land-based and afloat test program across HM&E [hull, mechanical and engineering], C2, autonomy, perception and integrated combat system aspects prior to moving into serial production. By the end of 2023, we expect to have seven USV prototypes

operating under the direction of Surface Development Squadron One and that's in partnership with PMS-406 and the USV Program Office.

USVs are planned to be the high-endurance adjunct [missile] magazine based on commercial designs built around the common missile launcher and combat systems. The initial capability will be to support both surface warfare and strike warfare, but I anticipate that being expanded and air defense as well. The six LUSV studies contracts were awarded in September of this year. Those contracts are going to help refine specifications and requirements to inform future LUSV detail design and construction.

**What advances have you seen in unmanned operations technology and sustainment since your squadron was established?**

**THOMPSON:** Since Surface Development Squadron One was established, the advances I am most encouraged by are, we've got much more confidence in safe autonomous operations. We've been out and operating with these platforms for a long period of time. That resiliency really translates to increased on-station time, our abilities to control from ship or shore or, again, transfer control from ship-to-shore and vice versa. The capabilities of the various payloads for USVs provide the operators and leadership the confidence that manned/unmanned teaming does, in fact, enhance the lethality of the surface force.

I really believe it's a game-changing concept, not only for the future force structure but from a tactical, operational and strategic perspective. Those are the big differences I see from back in 2017 when I was just proving out that I can actually operate a USV from a destroyer to where we are today. I'll tell you that with the USV prototypes, we're rapidly expanding their participation in the exercises as well as conducting independent operations such as a recent missile test from an Overlord USV. The maturing fleet experimentation

and testing program only serves to increase the fleet's knowledge on USV integration and operational and infrastructure support requirements.

**What do you see as the remaining challenges of deploying, operating, and sustaining USVs?**

**THOMPSON:** Well, you know, we're going to continue working to make the USVs more reliable and sustainable through experimentation, lessons learned, testing, evaluation and increased employment. You can't learn when those things are pierside, so we got to keep pushing them out there. Every USV underway hour provides us additional data and learning opportunities that support the maturation of economy and reliability. I said that one of the encouraging things was an increased confidence level and the safe autonomous operations. We still have some work to do in that area. Obviously, COLREGS [International Regulations for Preventing Collisions at Sea 1972] remains a focus area for the program. Today, the autonomy and reliability conduct vessel avoidance for 1v1 [one versus one] COLREGS encounters. However, we're still got some work to do in complying with the full scope of COLREGS. That's the hierarchy of vessels, low visibility compliance, autonomous lights, autonomous sound signals, etc.

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# Muslim Civil Rights Group Protests Name 'Fallujah' for U.S. Navy Ship

The amphibious assault ship USS Tripoli (LHA 7) sails with the amphibious assault ship USS America (LHA 6) during a photo exercise in the Philippine Sea, Sept. 17, 2022. The future USS Fallujah (LHA 9) will be similar to these ships but equipped with a well deck. *U.S. MARINE CORPS / Lance Cpl. Christopher Lape*

ARLINGTON, Va. – A Muslim civil rights group is protesting the U.S. Navy's selection of the name "Fallujah" as the name of a future amphibious assault ship.

The Council on American-Islamic Relations (CAIR), self-described as the nation's largest Muslim civil rights and advocacy organization, "called on the U.S. Navy to change the name of the future America-class amphibious assault ship 'USS Fallujah,'" in a Dec. 15 press release.

Secretary of the Navy Carlos Del Toro announced Dec. 14 that a future America-class amphibious assault ship, LHA 9, will be named USS Fallujah. The ship "will commemorate the First and Second Battles of Fallujah, American-led offensives during the Iraq War. The name selection follows the tradition of naming amphibious assault ships after U.S. Marine Corps battles, early U.S. sailing ships or legacy names of earlier carriers from World War II," the Navy release said.

The First Battle of Fallujah occurred in April 2004 in an effort to capture or kill insurgents responsible for the killing of four U.S. contractors, according to the Navy Department release. The Second Battle of Fallujah, fought between Nov. 7 and Dec. 23, 2004, was a major U.S. led offensive to retake control of the city from insurgents and foreign fighters. With over 100 coalition forces killed and over 600 wounded, Operation Phantom Fury is considered the bloodiest engagement of the Iraq War and the fiercest urban combat involving U.S. Marines since the Vietnam War's Battle of Hue City.

CAIR has a different regard for the battles.

"The two battles fought in Fallujah, Iraq, in 2004, were the bloodiest fighting of the Iraq War. Hundreds of civilians – including women and children – were killed during the battles," CAIR said in the release. "To this day, the civilian population is reportedly being negatively impacted by the weapons used in those battles."

"Just as our nation would never name a ship the 'USS Abu Ghraib,' the Navy should not name a vessel after notorious battles in Fallujah that left hundreds of civilians dead, and countless children suffering from birth defects for years afterward," said CAIR National Deputy Director Edward Ahmed Mitchell, in the CAIR release. "There must be a better name for this ship – one that does not evoke horrific scenes from an illegal and unjust war."

The secretary of the Navy selected the name of the battles "to memorialize the Marines, Soldiers and coalition partners that fought valiantly and those that sacrificed their lives during both battles of Fallujah. This namesake deserves to be in the pantheon of iconic Marine Corps battles and the LHA's unique capabilities will serve as a stark reminder to everyone around the world of the bravery, courage and commitment to freedom displayed by those who fought in the battle."

“Under extraordinary odds, the Marines prevailed against a determined enemy who enjoyed all the advantages of defending in an urban area,” said Commandant of the Marine Corps Gen. David H. Berger, in the announcement. “The Battle of Fallujah is, and will remain, imprinted in the minds of all Marines and serves as a reminder to our Nation, and its foes, why our Marines call themselves the world’s finest.”

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# Marine Corps Adds Cherry Point Squadron to F-35B Operators

A U.S. Marine Corps AV-8B Harrier assigned to Marine Attack Squadron 542 flies over Bodo, Norway during Fjord Fury, June 6, 2018. *U.S. MARINE CORPS / Lance Cpl. Jailine L. Martinez*

ARLINGTON, Va. – The Marine Corp is converting another AV-8B Harrier II attack squadron to F-35B Lightning II strike fighters, the first F-3B fleet squadron to be based on the East Coast.

Marine Attack Squadron 542 (VMA-542) – the Tigers – was re-designated Marine Fighter Attack Squadron 542 (VMFA-542) in ceremonies held at the squadron's base at Marine Corps Air Station Cherry Point, North Carolina, as it retires its last Harriers in favor of the Lightning II. The squadron is scheduled to be operational with its F-35Bs by next summer.

VMA-542's last detachment of Harriers deployed to the Baltic Sea in 2022 on board USS Kearsarge and operated for a period from Estonia in during the Russian invasion of Ukraine.

With the transition of VMFA-542, the only two AV-8B squadrons, VMA-223 and VMA-231, both based at Cherry Point, will remain flying in the Marine Corps. The last AV-8Bs are scheduled for retirement in fiscal 2027.

VMA-542 activated in March 1942 during World War as Marine Night Fighter Squadron 542 and flew its F6F-3N Hellcats in combat in the Pacific, including the Battle of Okinawa. In 1948, the squadron was re-designated Marine All-Weather Fighter Squadron 542 and was equipped with F7F-3N/4N Tigercat fighters, which the squadron flew in the Korean War. In 1951, the squadron returned to the United States for transition to the F3D-2 Skyknight jet night fighter. In 1958 the squadron switched to the F4D-1 Skyray fighter.

In 1963, the squadron was redesignated VMFA-542 as it upgraded to the F-4B Phantom II. From July 15 until January 1970, the Tigers flew combat missions over Southeast Asia during the Vietnam War. The squadron was de-activated on June 30, 1970, but re-activated on Jan. 12, 1972, as the second AV-8A Harrier squadron. In May 1986, the Tigers completed transition to the AV-8B Harrier II.

With the Harrier II, VMA-542 participated in combat operations such as Operation Desert Shield and Desert Storm in Southwest Asia, Operation Noble Anvil in Kosovo, Operation Iraqi Freedom in Iraq, Operation Enduring Freedom in Afghanistan, Operation Odyssey Dawn in Libya, Operation Odyssey Lightning in Libya, Operation Inherent Resolve in Afghanistan, as well as deployments in support of multiple Marine Expeditionary Units, according to 1st Lt. Hudson Sadler of the 2nd Marine Aircraft Wing.

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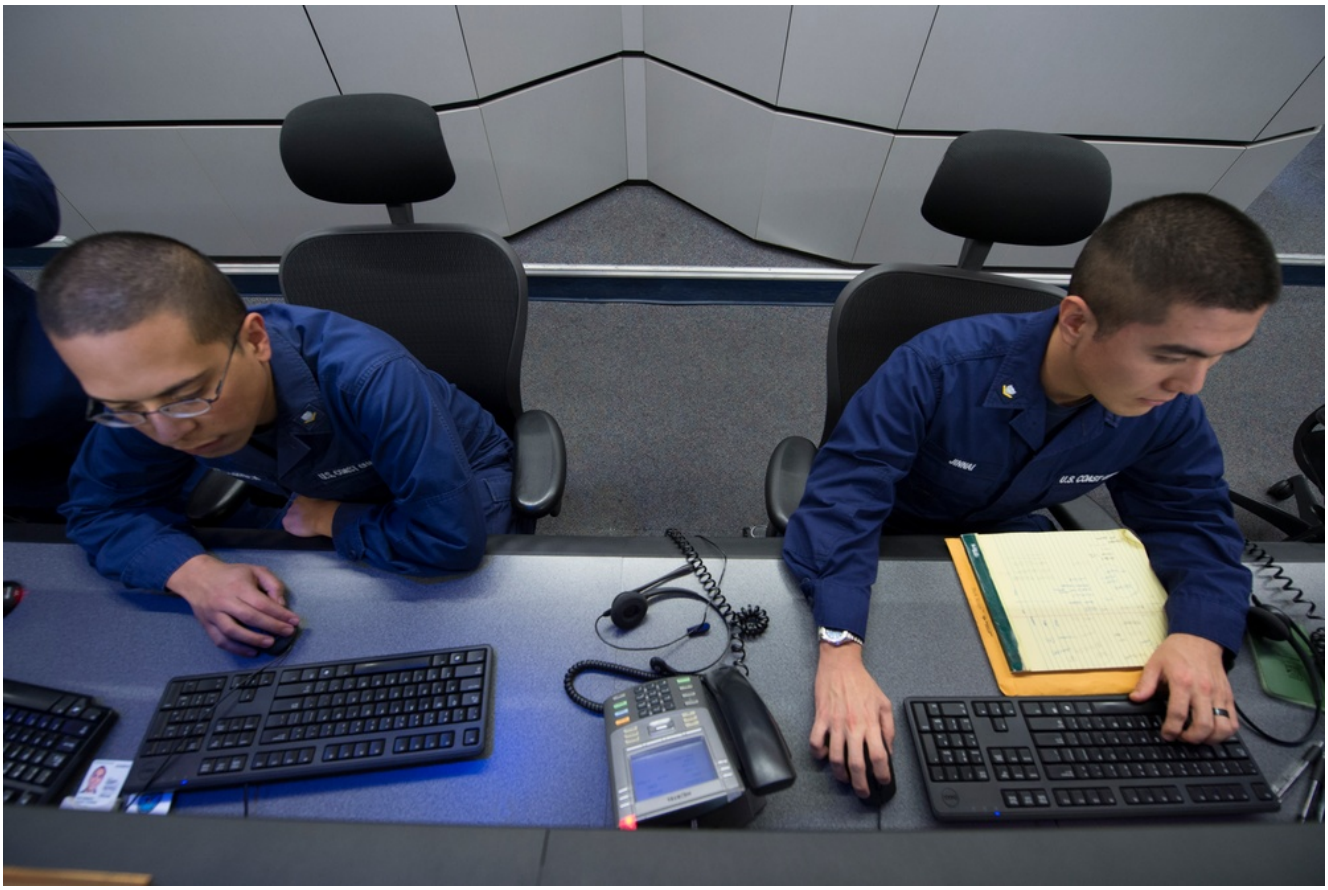
# Coast Guard Establishes Cyber Reserve Component and Cyber Billets



A Coast Guard Information Systems Technician adjusts cables inside a server room at the Telecommunication and Information Systems Command (TISCOM) Jan. 24, 2013. *U.S. COAST GUARD / Petty Officer 2nd Class Etta Smith*

ARLINGTON, Va. — The Coast Guard is creating three reserve entities to strengthen its cyber capabilities, the service's headquarters announced in an internal message.

The Coast Guard's Office of Cyberspace Forces' team in charge of implementing the cyber mission specialist (CMS) rating is creating a 39-member Reserve Cyber Protection Team.

Also being created are positions for 48 Reserve Cyber Advisors. These personnel will be assigned to Coast Guard operational commands within the Marine Transportation System.

In addition, a 15-member Coast Guard cyber reserve unit is being established at U.S. Cyber Command.

"These teams, along with the [Coast Guard Cyber Reserve Division, will consist of enlisted members from the CMS and IS [Intelligence Specialist] ratings, Cyber Mission Management (CMM) warrant officer specialty and commissioned officers," the message said.

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# Navy Requests Concepts for Attritable Mother Ship for Unmanned Systems


The large unmanned surface vessel Nomad transits the Pacific Ocean to participate in Exercise Rim of the Pacific (RIMPAC) 2022. The Navy's concept for a an attritable unmanned mother ship (AUMS) for delivering large numbers of unmanned systems could resemble a smaller version of a Project Overlord ship. *U.S. NAVY / Mass Communication Specialist 1st Class Tyler R. Fraser*

ARLINGTO, Va. – The U.S. Navy has issued a Request for Information for concepts for an attritable unmanned mother ship to "cost-effectively deliver large numbers of UxVs (unmanned systems) to forward locations in a contested environment," the published notice of the request said.

The Attritable UxV Mother Ship (AUMS) Program stressed in the Oct. 31 announcement that the ship should cost as minimal as possible so that loss of such a ship would be acceptable.

The program office also said the AUMS concept "should explore modular open system approaches to have the ability to quickly insert the latest technology into a midlife upgrade."

The RFI listed the following operational parameters for the AUMS:

- Open-ocean transit distance of 1,500 nautical miles (may vary from 1,000 to 2,000 depending on cost)
- Top speed from 12 to 20 knots
- Survivability in Sea State 5; full mission capability in Sea State 4
- Five days of operation without onboard human intervention
- Support of a 20-foot container (either towed or onboard, with capability to push it over the side); upon drop off, the container will be self-sustaining
- Be unmanned, capable of navigating via waypoints with GPS
- Have Over-the-Horizon and Line of Site Communications.
- Feature capability for resistance to boarding and tampering
- Self-scuttling capability upon remote order
- System will only traverse in the open ocean, will never operate less than three nautical miles from any shoreline untended.
- Minimum service of the vessel would be five years, with longer service life desired if obtainable for a small cost increase

Government furnished equipment initially would include the command, control, communications, computers and intelligence (C4I) suite and a modularized 20-foot ISO container with UxVs.

The Navy is aiming to award a design and construction by mid-2026, with delivery of the first AUMS withing 24 months of contract award.

The RFI was issued by the Unmanned Maritime Systems Program Office of the Program Executive Office (PEO) Unmanned and

Small Combatants (USC). Responses must be received by Dec. 15.

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# USS Zumwalt Returns from First Western Pacific Deployment


The Zumwalt-class guided-missile destroyer USS Zumwalt (DDG 1000) sails through the Pacific Ocean. *U.S. NAVY / Mass Communication Specialist 3rd Class Christopher Sypert*

ARLINGTON, Va. – The guided-missile destroyer USS Zumwalt (DDG 1000), lead ship of its three-ship class, completed a short deployment to the Western Pacific Ocean on Nov. 11, marking the first operational employment the class as part of the

fleet integration process.

The Zumwalt, which departed Naval Station San Diego on Aug. 1, operated in the U.S. 3rd Fleet and U.S. 7th Fleet areas of responsibility. The deployment involved a wide variety of training, testing and evaluation of operational concepts, fleet integration, crew size and ship systems, said Capt. Shea Thompson, commodore of Surface Development Squadron One, and Capt. Amy McInnis, commanding officer of USS Zumwalt, in a Nov. 16 media roundtable.

The deployment, which concentrated on fleet integration, was termed "very successful" by Thompson who called it an important milestone for the DDG 1000 class and for the Navy" and that it marked "significant strides in learning how to employ, integrate and sustain Zumwalt as she operated forward" and a "significant step forward for the future of this class."

During the deployment, the Zumwalt operated and trained in joint simulated fires training with a Japanese destroyer and a U.S. Air Force B-1B bomber; mine countermeasures proof of concept work with a forward-deployed explosive ordnance detachment; operations with fleet maritime operations centers, and the staff of the 7th Fleet's Task Force 71; and operations with U.S. Army aviation. The ship also conducted expeditionary maintenance in Pearl Harbor – a location outside of home port – with contractor maintenance support, which Thompson said was by design for the Zumwalt class.

McInnis, who joined the crew as executive officer in January 2020 and fleeted up to command of the ship in November 2021, said that during a year of work-ups with the crew of 171 the ship practiced integrated and advanced scenarios, as well as radar, acoustic, thermal and magnetic signature testing.

She said the ship did not carry a helicopter detachment during the deployment but did carry two rigid-hull inflatable boats

for mine countermeasures exercises.

Thompson said the Zumwalt exercised all of its mission areas typical for a DDG. He also said the ship took advantage of the deployment for testing and assessment of signature management, about which he was not at liberty to detail because of classification.

“We expect to capitalize on those lessons learned as we continue to employ the ship forward and integrate that platform into fleet operations and exercises,” Thompson said.

Thompson said that in his assessment, Zumwalt achieved Initial Operational Capability “today.”

The commodore said the Zumwalt had no direct interaction with Chinese navy ships during the deployment.

The Zumwalt will be modified during 2024-2025 with Conventional Prompt Strike hypersonic missile launchers for its primary strike mission, he said.

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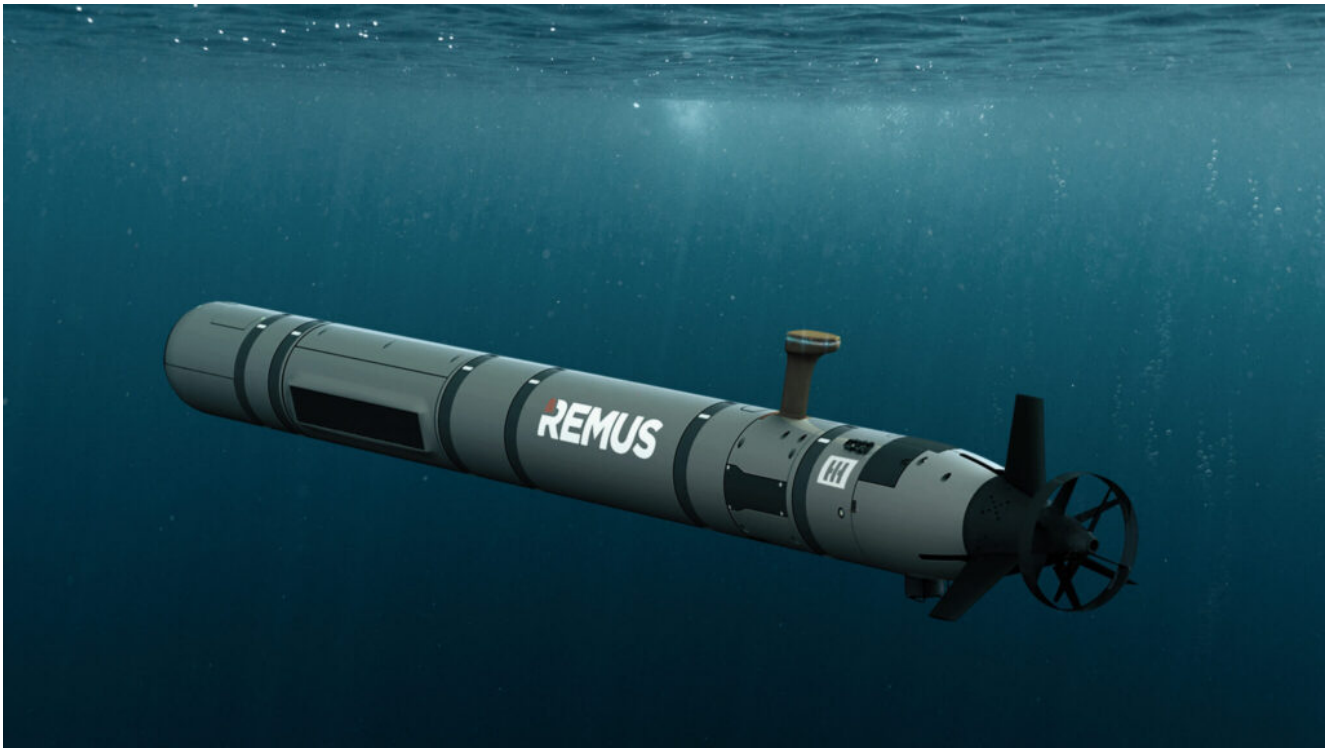
# HII Announces REMUS 620 Next-Generation, Submarine-Deployable Medium UUV




HII's REMUS 620 *HII*

ARLINGTON, Va. – HII's Mission Technologies division has developed a new generation of medium unmanned underwater vehicle (MUUV) – the REMUS 620 – that leverages advances incorporated in its smaller REMUS 300 UUV, the company said in a Nov. 7 press conference and news release.

The REMUS 620 is based on the design of the REMUS 300, which has been selected by the U.S. Navy as its new Lionfish small UUV. The REMUS 620 will feature longer range and endurance, capable of a battery endurance of up to 110 hours and a range of 275 nautical miles. With a synthetic-aperture sonar installed, the REMUS 620 will have a battery life of 78 hours and a range of 200 nautical miles. The MUUV can sprint up at 8 knots and will have a navigation accuracy of 0.1% of distance travelled, said Duane Fotheringham, president of Mission Technologies' Unmanned Systems business group.

The 12 ¾-inch-diameter REMUS 620 has the same size and weight as the REMUS 600, of which the company has delivered 175 to customers in the United States, United Kingdom, Australia and Japan. The REMUS 600 is the basis for the U.S. Navy's MUUVs currently used by mine countermeasures squadrons (Mk18 Mod 2

Kingfish), Naval Oceanographic Office (Littoral Battleship Sensing-Autonomous Undersea Vehicle) and submarine force (LBS-Razorback). The REMUS 620 is designed for such missions as mine countermeasures, hydrographic surveys, intelligence collection, surveillance, cyber warfare and electronic warfare.

The REMUS 620, developed with HII's internal funding, features modern core electronics and navigation and communications systems and modular, open architecture interfaces to accommodate wet or dry payloads, including towed payloads and custom payloads developed by customers. The UUV includes HII's Odyssey suite of advanced autonomy solutions for intelligent, robotic platforms, including the Odyssey Mission Management Software.

Mission data can be offloaded from the UUV by a removable hard drive, WiFi and Iridium satellite link, with other options including line-of-sight RF, high-data rate transmission, acoustic modems, optical modems and plug-in ethernet, Fotheringham said.

The REMUS 620 features several interchangeable batteries that can be quickly exchanged for fully charged batteries.

The REMUS 620 can be deployed from submarines, surface combatants, amphibious warfare ships, small manned or unmanned craft and helicopters. The new UUV can also be a platform from which to launch small UUVs or UAVs.

Fotheringham said that the U.S. Navy has said it has launched and recovered REMUS 600 Razorbacks from the dry-deck shelters of submarines and out of torpedo tubes.

"Recently there has been quite a bit in the press about the Navy's efforts for launch and recovery of UUVs back into the torpedo tubes," he said. "Those stories indicated the Razorback vehicles are being tested with that capability of recovery back into a torpedo tube."

He said the capability to recover UUVs back into a torpedo tube is being worked by Woods Hole Oceanographic Institution, where the REMUS technology originally was developed.

“That solution that [Woods Hole] is developing for torpedo tube recovery is also compatible with the REMUS 620,” Fotheringham said.

“Retaining a forward strategic advantage requires the ability to deliver a multitude of effects from under the sea,” Fotheringham said. “The REMUS 620 is the first medium UUV designed to accurately deliver this range of advanced above-and-below water effects at long range.”

“We are prototyping and building the first vehicle now,” Fotheringham said. “We expect the first vehicle to be completed and in the water in 2023 with customer delivery in late ’23 or early ‘24.”

He said HII was in discussions with the U.S. Navy about the REMUS 620 but was not free to offer details.

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# Admiral: Guam Weather ‘Challenging’ for Navy’s Triton UAV Operations

A U.S. Navy MQ-4C Triton assigned to Unmanned Patrol Squadron (VUP) 19 prepares to take off from the flightline at Marine Corps Air Station (MCAS) Iwakuni, Japan, Oct. 5, 2022. *U.S. MARINE CORPS / Lance Cpl. David Getz*

ARLINGTON, Va. — The weather in Guam has proved to pose challenges to operations of the Navy's MQ-4C Triton high-altitude, long-endurance unmanned aerial vehicle, a Navy admiral said. He also praised the value of the Triton as a targeting platform.

In a situation report late last summer to the maritime patrol reconnaissance community, Rear Adm. Adam "Kujo" Kijek, commander, Patrol and Reconnaissance Group, said the "most impactful lesson" of the Early Operational Capability deployment of the Triton to Guam was one "delivered by mother nature."

Kijek said the "weather in Guam, and associated OP Areas [operations areas], can be very challenging for UAV operations. During 'monsoon' season, and with a stated goal of 16 missions per month, there were many days that Triton could

not get airborne or access required operating areas due to adverse weather. However, when weather permits Triton has proven its operational worth."

The admiral said that "to help combat these environmental anomalies, we executed a Seasonal Relocation Plan (SRP) to Misawa AB [Air Base] last summer, and Iwakuni [Marine Corps Air Station] this summer.  Exercising these expeditionary muscles and harvesting lessons learned will pay huge dividends when Triton Multi-INT shows up in theater next year."

Kijek noted that "there is tremendous value in providing the persistent ISR [intelligence, surveillance and reconnaissance] that Triton brings by establishing pattern of life and building a real-time Common Operational Picture for Fleet and Combatant Commanders. However, from a tactical perspective, I have been most impressed when Triton works as a targeting platform in concert with other aircraft and surface units."

The admiral said he believed "the operational impact of Triton will grow exponentially" when the UAV's Multi-Intelligence Integrated Functional Capability-4 upgrade is deployed in 2023.

"The ability of Triton's SIGINT [signals intelligence] package to exploit the electromagnetic spectrum and the sheer volume of information harvested will present significant challenges to the Intel Community," he said. "Simply adding a SIGINT Coordinator (SC) to every Triton aircrew is not enough. We are working closely with the C10F [Commander, U.S. 10th Fleet and NAVIFOR [Navy Information Forces] to ensure that Triton is postured to take full advantage of Navy's Distributed SIGINT Operations architecture to realize its full potential. Achieving these linkages will be a primary focus during my tenure."

# Navy to Merge Mine-Countermeasures Helicopter Squadrons


An MH-53E Sea Dragon helicopter from Helicopter Mine Countermeasures Squadron (HM) 12 participates in a nine-aircraft formation flight alongside HM-14 and HM-15. *U.S. NAVY / Mass Communication Specialist 3rd Class Jesse Schwab*

ARLINGTON, Va. – The Navy plans to deactivate one of its two fleet helicopter mine countermeasures squadrons next year and combine many of its personnel and helicopters with the remaining squadron.

Helicopter Mine Countermeasures Squadron 14 (HM-14), which operates the MH-53E Sea Dragon helicopter from Naval Station Norfolk, Virginia, is scheduled for de-activation effective

July 31, 2023, according to a Navy directive.

HM-14's sister squadron, HM-15, also based in Norfolk, will absorb 102 full-time and 48 reserve enlisted personnel and four full-time and eight reserve officers from HM-14 in order to retain "as much airborne mine countermeasure capability as possible," the directive said.

The directive used the term "HM-15 MAX" to describe the enlarged squadron.

HM-14 and HM-15 are considered combined Active-Reserve squadrons, with an 80/20 mix of personnel from the two components.

HM-14 maintains a detachment in Pohang, South Korea, in support of the U.S. 7th Fleet, while HM-15 maintains a detachment in Manama, Bahrain in support of the U.S. 5th Fleet.

Another squadron, HM-12, serves as a fleet replacement squadron for the MH-53E fleet.

The Sikorsky-built MH-53E Sea Dragon has two primary missions: airborne mine countermeasures and Navy heavy lift and vertical onboard delivery. The aircraft is a derivative of the CH-53E Super Stallion but is heavier and has a greater fuel capacity and range. Capable of transporting up to 55 troops, the MH-53E can carry a 16-ton payload 50 nautical miles or a 10-ton payload 300 nautical miles. In its primary mission, the MH-53E can tow a variety of mine countermeasures systems, including the Mk105 magnetic minesweeping sled, the AQS-24A side-scan sonar and the Mk103 mechanical minesweeping system. Mission duration can exceed four hours.

The Navy plans to keep the MH-53E in service at least until 2025.

# Navy to Consolidate Fire Scout UAVs on West Coast

Aviation Electronics Technician 1st Class Nathan Thomas and Aviation Electrician's Mate 2nd Class Tristan Persky, assigned to the "Sea Knights" of Helicopter Sea Combat Squadron (HSC) 22, Detachment 5, prepare an MQ-8C Fire Scout for takeoff on the flight deck of the Freedom-variant littoral combat ship USS Milwaukee (LCS 5) Jan. 29, 2021. *U.S. NAVY / Mass Communication Specialist 2nd Class Danielle Baker*

ARLINGTON, Va. – The Navy plans to consolidate operations of its Fire Scout unmanned helicopters to the West Coast in 2023, a Navy spokesman said.

The MQ-8 Fire Scouts have been by detachments of Helicopter Sea Combat Squadron 22 (HSC-22) on the East Coast and by HSC-21 and HSC-23 on the West Coast. The squadrons operated

Fire Scouts alongside their MH-60S Seahawk helicopters.

“The Navy plans to pivot all MQ-8 operations to the West Coast in [fiscal 2023] with HSC-21 transitioning from the MQ-8B to the more capable MQ-8C. HSC-23 already operates the MQ-8C,” said Cmdr. Zach Harrell, spokesperson for Commander, Naval Air Forces, in an email to Seapower.

According to a Sept. 27 Navy directive, the East Coast squadron, HSC-22, will be de-activated effective June 30, 2023.

“Currently, there are no plans to expand Fire Scout operations to other helicopter sea combat (HSC) squadrons,” Harrell said.