

# NAVAL AVIATION NEWS

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SUMMER 2017

## WELCOME TO THE FLEET USS Gerald R. Ford

Navy Commissions Lead Ship of First New Carrier Class in More Than 40 Years



### WHAT'S INSIDE

- ▶ Stingray UAS Requirements Outlined
- ▶ F-35C Plan to Join Fleet
- ▶ 4th MAW Reinforces Marine Aviation



As we continue to celebrate the 100th anniversary of Naval Aviation News, the U.S. Navy's oldest periodical, we want to encourage more fleet submissions and stories on the Naval Aviation mission. This issue contains articles written by naval aviators and we know you all want to see even more. Email your story ideas and contact info to [nannews@navy.mil](mailto:nannews@navy.mil) and we'll follow up.  
—Ed.



An E2-C Hawkeye early warning and attack aircraft assigned to the "Screwtops" of Airborne Early Warning Squadron (VAW) 123 flies over aircraft carrier USS Dwight D. Eisenhower (CVN 69).

U.S. Navy photo by MC3 Nathan T. Beard

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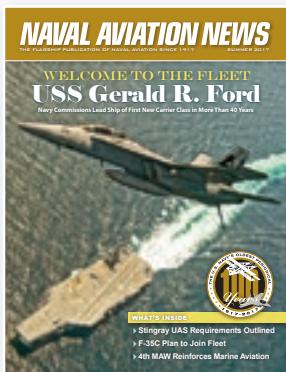
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## ON THE COVER



An F/A-18F Super Hornet assigned to Air Test and Evaluation Squadron (VX) 23 flies over USS Gerald R. Ford (CVN 78) July 28. The aircraft carrier is underway conducting test and evaluation operations. (U.S. Navy photo by Erik Hildebrandt)

The future of Naval Aviation is on the horizon. In this issue, we cover several inaugural events including the July 22 commissioning of USS Gerald R. Ford (CVN 78) on page 26, the Ford's first recovery and launch of an F/A-18F Super Hornet using new technologies (page 9), and the July release of the Navy's F-35C Lightning II Fleet Integration Plan (page 12). On page 30, requirements are outlined for the MQ-25 Stingray, the first carrier-based Unmanned Air System (UAS), and on page 18, the Marine Corps' CH-53K King Stallion, the most powerful helicopter in the Department of Defense, arrives at Naval Air Station Patuxent River, Maryland, for continued flight testing.

**On the Back Cover:** The CH-53K King Stallion lands after a test flight in West Palm Beach, Fla., on March 22. The CH-53 will be considered the most powerful helicopter in the Department of Defense and is scheduled to completely replace the CH-53E Super Stallion by 2030. (U.S. Marine Corps photo by Lance Cpl. Molly Hampton)

*The U.S. Navy's Oldest Periodical, Established 1917*





U.S. Marine Corps photo by Cpl. Samantha K. Braun



U.S. Marine Corps photo by Cpl. Samantha K. Braun

*U.S. Marine Corps Lt. Gen. Jon M. Davis, Deputy Commandant of Aviation, center, salutes Commandant of the Marine Corps Gen. Robert B. Neller, during his retirement ceremony at Marine Barracks Washington, Washington, D.C., July 10.*

maintain a strong and successful life for our Osprey fleet. The V-22 is our most in-demand aircraft as it continues to transform the way the Marine Corps conducts assault support, and provides support to a variety of Marine Air-Ground Task Force (MAGTF) missions and humanitarian relief operations.

## Recapitalization

At this point, we are more than one-third complete with the transition of every tactical platform in our inventory. Our plan recapitalizes current squadrons with transformational technologies—fifth-generation short take-off and vertical landing (STOVL) strike fighters, tiltrotor technology, advanced heavy-lift helicopters and modernized amphibious-based Group 3 and Group 5 Unmanned Aircraft Systems (MUX). In 2015, we declared the F-35B Lightning II operational, and now we have four squadrons—Marine Fighter Attack Squadron (VMFA) 121, VMFA-211, Marine Fighter Attack Training Squadron (VMFAT) 501 and Marine Operational Test and Evaluation Squadron (VMX) 1. VMFA-121 is now permanently stationed in Japan. In 2016, we executed our first RQ-21 deployment in support of a Marine Expeditionary Unit. We also fired our first Advanced Precision Kill Weapon System (APKWS) laser-guided rocket off our Harriers both in Libya and Operation Inherent Resolve, and we continue to bring air power to the fight in the Middle East. We continue to experiment with and field our next generation electronic warfare (EW) asset, the Intrepid Tiger II, which will ultimately provide tailored EW capability to all of our airborne platforms.

We also will continue to develop the V-22 aerial refueling system, providing the capability to deliver fuel to other aircraft, both in the air and on the ground. We have validated a sea-based Group 5 Unmanned Air System (UAS) requirement, which will lead to the development of a sea-based multi-mission UAS. And lastly, the CH-53K program remains on track. Just over the Fourth of July holiday, we hit another milestone for the program. The CH-53K

Engineering Development Model 4 departed the West Palm Beach, Florida, test facility and arrived at Naval Air Station Patuxent River, Maryland. This movement is in support of the test plan for CH-53K and demonstrates our outright confidence in the platform.

It is important to note that Marine Aviation is an essential element in the nation's force in readiness. To accomplish that mission in the future threat environment, we are procuring a force with a fourth- and fifth-generation mix of our level of effort attack platform, the AH-1Z Viper and UH-1Y Venom, and the F-35B STOVL-variant and F-35C carrier-variant aircraft. The Marine Corps bought more than 380 fourth-generation level-of-effort aircraft for our low-end fight—the AH and UH-1s—and our fifth-generation jet can be quickly configured into a fourth-generation bomb truck. The last thing the Marine Corps needs is another fourth-generation aircraft program—especially one that can't be based on an amphibious LHA or LHD, a light aircraft carrier like HMS Queen Elizabeth, or short expeditionary strips ashore. Predicting the future is always difficult—even the smartest of the smart guys get it wrong. We have no idea where we will be fighting or against whom in 2025. The Marine Corps has to be ready for the toughest fight. The real question ought to be this: why are we building any more fourth-generation birds? What we buy in 2025 will be with us for 30 to 40 years—fourth-generation Hornets in 2055-2065? The smarter move is to build fifth-generation now.

## People

We're always in a quest for better readiness. I would say it's not just the quest for materiel readiness; it is the pursuit of personnel readiness of our enlisted maintainers. I've learned as the Marine Corps Deputy Commandant for Aviation that it is imperative to have high-quality, highly trained, motivated and incentivized Marines in the right qualification density to meet and exceed our readiness requirements. We need to look out for our people, and in turn, we will see their efforts—our group efforts—reflected in our achievements.

In the future, I believe manpower retention is going to be a big issue for us. It takes a long time to build flight leads and instructors. I think the supply-and-demand signal from other employers is going to continue to be alluring to our Marines if operational tempo stays high. We are actively fixing the readiness, and that will help with retention. But, as Marines, we all need to be supportive of each other in order to keep our people in the cockpit, keep our training base strong and cultivate experience across our Corps.

I do know we are on the right path to a fully ready Marine Aviation component. I have full faith that Lt. Gen. Steve Rudder

is the perfect person to replace me in this position. He is a very talented leader with extreme focus. I also know that we have exactly the right Commandant to put this all together to recover our readiness and keep it on track. So while we are a little shy of the finish line, we will get to the finish line. But we cannot get to the finish line without the hard work and dedication of each and every Marine and Sailor who continue to work tirelessly to keep our aircraft safe and flying, and their families who continue to show love and support when they are needed most. My sincerest gratitude goes out to you.

Thank you to all those I've had the pleasure of serving with and for. Semper Fidelis

*Lt. Gen. Jon Davis served as Marine Corps Deputy Commandant for Aviation from June 2014 through July 2017, and retired July 10. *



**Lt. Gen. Jon M. Davis** served as Deputy Commandant for Aviation, Headquarters Marine Corps from June 2014 to July 2017, retiring July 10. Commissioned in May 1980 through the PLC Program, Davis completed Basic School in August 1980 and then reported for flight training. Upon receiving his wings in September 1982, he was selected to fly the AV-8A Harrier.

He reported to Marine Attack Training Squadron (VMAT) 203 in October 1982, completed Harrier training and reported to Marine Attack Squadron (VMA) 231 in 1983, where he deployed aboard USS Inchon (LPH-12). In 1985, he transferred to VMAT-203 serving as an instructor pilot. In 1986, he attended the Weapons and Tactics Instructor (WTI) course at Marine Aviation Weapons and Tactics Squadron (MAWTS) 1. In 1987, he transferred to VMA-223 as the WTI and operations officer. From 1988 to 1991, he served as an exchange officer with the Royal Air Force. After training in the United Kingdom, he deployed to Guter-

sloh, Germany, as a GR-5/7 attack pilot with 3(F) squadron. From 1991 to 1994, he served as an instructor at MAWTS-1 in Yuma, Arizona. From 1998 to 2000, he commanded VMA-223. During his tour, the "Bulldogs" won the CNO Safety Award and the Sanderson Trophy two years in a row and exceeded 40,000 hours of mishap free operations. After completing the Executive Helicopter Familiarization course at HT-18 in Pensacola in 2003, he was assigned to MAWTS-1 where he served as executive officer, and from 2004 to 2006 as Commanding Officer. From 2006 to 2008, he served as the deputy commander Joint Functional Component Command-Network Warfare at Fort Meade, Maryland. He commanded the 2nd Marine Aircraft Wing from July 2010 to May 2012. From May 2012 to June 2014, he served as the deputy commander, United States Cyber Command.

His staff billets include a two year tour as a member of the 31st Commandant's Staff Group, and two years as the junior military assistant to the Deputy Secretary of Defense. In 2003, he served as an assistant operations officer on the 3rd Marine Air Wing staff in Kuwait during Operation Iraqi Freedom. In 2004, he served in Iraq as the officer in charge of the 3rd Marine Aircraft Red Team. He served as the Deputy Assistant Commandant for Aviation from 2008 to 2010. In the course of his career, he has flown more than 4,500 mishap-free hours in the AV-8, F-5 and F/A-18 and as a co-pilot in every type/model/series tilt-rotor, rotary-winged and air refueler aircraft in the Marine Corps inventory.

Davis graduated with honors from Basic School, was a distinguished graduate of the Marine Corps Command and Staff College, and a graduate of the Tactical Air Control Party course, the Amphibious Warfare School, the School of Advanced Warfighting, and Johns Hopkins School of Advanced International Studies. He holds a bachelor's of science from Allegheny College, a master's of science from Marine Corps University and a master's of international public policy from Johns Hopkins.

His personal decorations include the National Intelligence Distinguished Service Medal, the Defense Superior Service Medal (two awards), the Legion of Merit (two), Meritorious Service Medal (three), Navy Commendation (three) as well as other campaign and service awards. 

# Grampaw Pettibone

## Gramps from Yesteryear: June 1967

Before well-known artist Ted Wilbur first illustrated "Grampaw Pettibone" for Naval Aviation News in 1994, there was Robert Osborn, who in 1943 created the "sage of safety" character. From 1943 until he stepped down in 1994, Osborn's illustrations could be seen in the pages of Naval Aviation News. Here is a 50-year peek back in time to 1967. —Ed.

### Phlamed Out

This particular pair of F-4 Phantom "phlyers" was scheduled to fly as number four in a four-plane Sparrow missile-firing flight. After departure, the leader experienced an auxiliary air door malfunction and returned to base. Number two assumed the lead and headed for the designated firing range. All three aircraft attempted to fire but, owing to problems with the ground controller's radar, they were unable to do so. The flight then departed the firing area and set up an orbit in trail to burn down fuel southeast of the home field at 10,000 feet.

After a few turns in this pattern, all three aircraft were down to landing weight and the flight leader took up a heading for the initial approach to the duty runway, simultaneously instructing the flight to join up. Number three, believing that number two had lost sight of the leader, attempted to lead him in the rendezvous. As number three approached the leader from slightly above and astern, he realized the closure rate was excessive, so he retarded the throttles and extended the speed brakes.

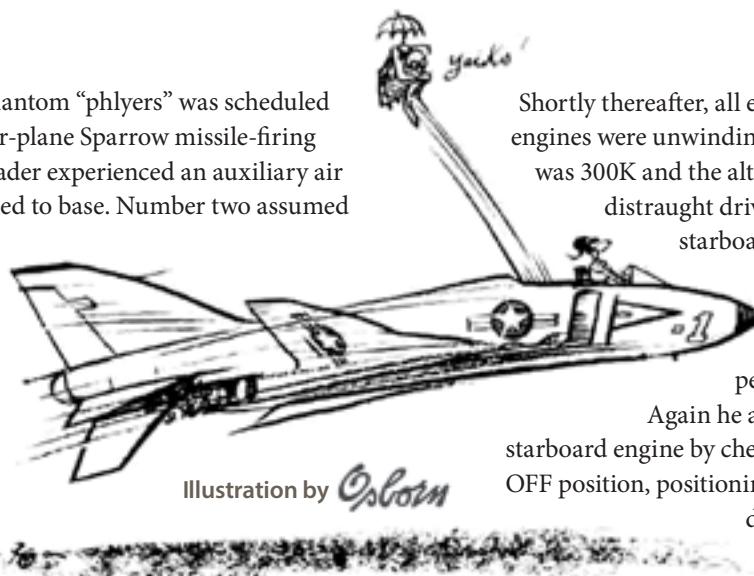


Illustration by *Osborn*

Shortly thereafter, all electrical power was lost, both engines were unwinding through 25 percent, airspeed was 300K and the altimeter read 1,700 feet. The distraught driver attempted to re-light the starboard engine by activating the ignition button but met with failure. (RPM on both engines was down to 20 percent by this time.)

Again he attempted to start the starboard engine by checking the left throttle in the OFF position, positioning the right throttle to idle and depressing the right ignition button. While the pilot was holding the ignition button, his radar intercept officer (RIO) yelled, "Do you want me to eject?" To which he replied, "Affirmative."

After the RIO departed, the pilot turned his attention to the left engine and met with failure again. During this interlude, the Phantom continued its descent and at this moment was down to 400 feet, indicating 200 knots. Noting the acuteness of the situation, the unfortunate driver followed the example of his RIO and ejected. Both "phlyers" enjoyed successful ejections and were retrieved in short order by the station helo.



**Grampaw  
Pettibone  
says ...**

Oh, my achin' ulcers! The board concluded that contributing cause factors to this fiasco were "the pilot's perceptual error, which led to a high closure rate necessitating rapid retardation to the throttles, the impaired physical condition of the pilot's left thumb (due to a previous fracture) resulting in his unorthodox grip on the throttles, and

'body English' which may have caused excessive lateral forces to be applied to the throttles."

Well, I've heard everything now. Sure, we can afford improvement in design, but we can't legislate against poor headwork. I seriously doubt if it would've helped this youngster anyway. First of all, we've gotta accept a missed rendezvous once in a while and take it like a man by sliding outside to a safe distance. Secondly, drivers like this fella had better bone up on the right procedure for restarting after a dual flame-out.

A little more Know and a little less Hope will save us a lot of airplanes and pilots, not to mention boosting the moral of the next-of-kin.

## CNO: Technological Development Must Accelerate for U.S. to Maintain Naval Superiority

ARLINGTON, Va.—The days of the U.S.'s uncontested maritime supremacy may be behind us, said Chief of Naval Operations (CNO) Adm. John Richardson at the Naval Future Force Science and Technology Expo July 21.

The U.S. Navy has enjoyed global maritime supremacy for the past 25 years, Richardson said, "But those days are over and we are back in competition." American naval forces today face a new era of competition from rising and resurgent naval powers, he noted, citing the a recent joint drill in the Baltic Sea involving the Russian and Chinese navies and a Chinese live-fire exercise in the Mediterranean Sea.

"Take the example of a large, dominant company that becomes complacent as it gets bigger," Richardson said. "That [complacency] makes you vulnerable to disruption. How can we avoid that fate? How can we restore our agility and competitive edge to maintain superiority?"

One answer, Richardson said, would be to expand current naval strength and readiness. That would entail at least three ambitious initiatives: building more ships and aircraft platforms, increasing the capabilities of those platforms, and networking

those platforms together so that they can work in concert.

The drive to increase capability is already well underway, Richardson noted in his remarks.

"You're seeing this with directed-energy weapons like LaWS [laser weapons system] and the electromagnetic railgun and its high-velocity projectile," he said. "Other advances include additive manufacturing, which could revolutionize logistics at sea.



*Chief of Naval Operations Adm. John Richardson shares his vision for expanding current naval strength and readiness during the Naval Future Force Science and Technology (S&T) Expo July 21.*

Being able to 3D print a part on a ship is more efficient than carrying it in a locker.”

Among the biggest challenges the Navy will face in expanding its current strength and readiness, though, will be ensuring that Navy personnel are trained to handle these new platforms and capabilities, he said.

But adversaries are already moving quickly to advance their own technological capabilities, the CNO warned, which means the pace of technological development and delivery in the Navy and Marine Corps must accelerate to maintain maritime superiority for U.S. naval warfighters.

"I'm not a scientist or technologist," Richardson said. "I'm here to define a problem for all of you [in attendance]. I want to bring science, technology and industry into the conversation early, so we can come up with the best solutions together."

The Future Force Expo is the premier science and technology event for the Navy and Marine Corps and is co-sponsored by the Office of Naval Research and the American Society of Naval Engineers.

*Written by Warren Duffie Jr., a communication specialist with the Office of Naval Research Corporate Strategic Communications.* 

## **Office of Naval Research Goal: First to Field**

WASHINGTON, D.C.—Experts in science, technology, engineering and mathematics (STEM) made their biennial trek to the Office of Naval Research's Science and Technology (S&T) Expo in July to learn, educate and network. By interacting with some of the brightest minds from around the globe, the Navy and Marine Corps continue to collaborate with industry and academia to guide future technological advances.

During the event at the Walter E. Washington Convention Center in Washington, D.C., Chief of Naval Research Rear Adm. David Hahn unveiled his framework

designed to align, allocate and accelerate technology delivery to the fleet.

"We have a great opportunity to supercharge the engine of naval research," Hahn said. "From discovery to deployment, innovative U.S. naval technology has been essential to mission success. We're going to ensure that continues."

Hahn challenged the Navy's research and development community to be the first to field decisive capabilities.

"You can certainly see the parallels to an industrial company that's moving at the speed of technology and incorporating all the digital into in a construc-

tive way. This is similar to our thinking, as Navy leadership works to move our capital investment intensive, industrial-based enterprise to a new place without overhauling the whole thing," Hahn said. "Our old methods of thinking about it, our old methods of behavior are not going to work going forward."

CNR's new strategic direction is outlined in the "Naval Research and Development: A Framework for Accelerating to the Navy and Marine Corps after Next."

*Written by Gulianna Dunn, a communication specialist with Naval Aviation Enterprise Public Affairs.* 

## USS Gerald R. Ford Completes 'Historic' Landing and Launch



U.S. Navy photo by Erik Hildebrandt

An F/A-18F Super Hornet assigned to Air Test and Evaluation Squadron (VX) 23 is recovered aboard USS Gerald R. Ford (CVN 78).

NORFOLK, Va.—Less than a week after President Donald J. Trump commissioned the U.S. Navy's newest aircraft carrier, USS Gerald R. Ford (CVN 78), the carrier launched and recovered its first fixed-wing aircraft July 28 off the coast of Virginia.

The occasion marked the first shipboard recovery and launch of a fleet fixed-wing aircraft using the advanced arresting gear (AAG) system and the electromagnetic launch system (EMALS), according to Capt. Rick McCormack, Ford's Commanding Officer. Previously, the systems had undergone testing ashore at Lakehurst, New Jersey.

"My team has worked closely with industry, Naval Air Systems Command, and the flight test community to make this historic event in Naval Aviation happen," McCormack said. "I am very proud of my crew."

The first arrested landing, or "trap," occurred at 3:10 p.m. that day when Lt. Cmdr. Jamie Struck of Tallmadge, Ohio, piloted an F/A-18F Super Hornet from Air Test and Evaluation Squadron (VX) 23 based at Naval Air Station Patuxent River, Maryland. The first catapult launch took place at 4:37 p.m.

The Super Hornet first landed on the carrier, catching the number two arresting wire of Ford's AAG system, and later launched from catapult one using the carrier's EMALS.

"Today, USS Gerald R. Ford made history with the successful landing and launching of aircraft from VX-23 using the AAG and EMALS," said Adm. Phil Davidson, commander, U.S. Fleet Forces. "Great work by the Ford team and all the

engineers who have worked hard to get the ship ready for this milestone."

The software-controlled AAG is a modular, integrated system that consists of energy absorbers, power conditioning equipment and digital controls, with an architecture that provides for built-in testing and diagnostics, resulting in reduced maintenance and manpower requirements.

AAG is designed to provide improved reliability and safety margins as well, and it allows for the arrestment of a greater range of aircraft.

The mission and function of EMALS remain the same as those of the traditional steam catapult. However, the new system delivers higher launch energy capacity, improvements in system maintenance, improved reliability and efficiency, more accurate end-speed control and smooth acceleration.

EMALS is designed to expand the operational capability of the Navy's future carriers to include all current and future planned carrier aircraft—from lightweight unmanned aircraft to heavy strike fighters.

"I could not be more proud of the men and women who, for the better part of the last two decades, have worked to bring these new technologies to the fleet," said Capt. Stephen Tedford, program manager. "Their perseverance and dedication to service have made this day possible."

*From Commander, Naval Air Forces Atlantic Public Affairs.* 

## VFA-115 Surpasses 100,000 Class A Mishap-Free Flight Hours

CORAL SEA—While conducting operations from USS Ronald Reagan (CVN 76), the “Eagles” of Strike Fighter Squadron (VFA) 115 achieved a major safety milestone July 3 when they surpassed 100,000 flight hours without a Class A mishap, one of the longest active streaks of any U.S. Navy strike fighter squadron.

The achievement is remarkable in the tactical aviation community, reaching across 23 years of continuous flight operations using the A-6E Intruder, F/A-18C Hornet and F/A-18E Super Hornet. Over that time, the squadron completed two homeport changes, numerous regional security patrols in the Indo-Asia-Pacific region, and multiple combat deployments in support of Operations Southern Watch, Enduring Freedom (OEF) and Iraqi Freedom.

A Class A mishap is defined as an accident resulting in death or permanent disability, or damage to an aircraft exceeding \$2,000,000.

“The achievement of this major safety milestone is a testament to the steadfast dedication and tireless efforts of generations of Eagles,” said Cmdr. Sam Gray, VFA-115’s Commanding Officer. “We are proud to carry on the legacy of safety excellence that has become an ingrained piece of our squadron’s culture.”

Operating tactical aircraft in the challenging carrier-based environment



*Aircraft maintainers assigned to the “Eagles” of Strike Fighter (VFA) 115 prepare an F/A-18E Super Hornet for flight operations.*

is unique to Naval Aviation. It requires a team effort that includes not only the squadron’s pilots, but also scores of maintainers who meticulously ensure maintenance procedures are executed properly to safely generate credible combat power from aircraft carrier decks around the world.

“This incredible achievement is built on the collective exertion of thousands of amazing maintenance personnel who have served and continue to serve in VFA-115,” said Lt. Cmdr. Dave Tickle, VFA-115’s maintenance officer. “Our excellent safety

performance is the direct result of the procedural discipline and diligent work ethic that has been demonstrated by Eagle personnel for decades.”

Established in 1942, VFA-115 is one of the Navy’s oldest active squadrons, and was the first to deploy with the Super Hornet. VFA-115 is currently conducting security and stability operations in the Indo-Asia-Pacific region aboard Reagan as a component of Carrier Air Wing (CVW) 5.

*Written by Lt. Chris Pagenkopf, Strike Fighter Squadron (VFA) 115 Public Affairs.*



*U.S. Navy photo*

## Bombs Away!

U.S. Marine Corps Lt. Col. Tom “Sally” Fields conducted U.K. AIM-132 and Paveway IV external weapons testing with an F-35B Lightning II Short Takeoff and Vertical Landing (STOVL) variant May 12. Fields is based at the Naval Air Station Patuxent River Integrated Test Force (ITF) and assigned to Air Test and Evaluation Squadron (VX) 23.

## VAW-115 ‘Liberty Bells’ Bid Farewell after 44 years of Service in Japan



U.S. Navy photo by Lt. j.g. Andrew Leatherwood

Two E-2C Hawkeyes, assigned to the “Liberty Bells” of Carrier Airborne Early Warning Squadron (VAW) 115, conduct a flyby of Mount Fuji in Japan.

**NAVAL AIR FACILITY ATSUGI, Japan**—The last E-2C Hawkeyes from Carrier Airborne Early Warning Squadron (VAW) 115 “Liberty Bells” departed Naval Air Facility (NAF) Atsugi Japan on June 1, marking the end of a 44-year storied legacy of service and achievements for one of the Navy’s longest-serving forward-deployed squadrons in the U.S. Navy.

Boasting a distinguished history, having accumulated more than 24 consecutive years and 50,000 hours of Class A mishap-free hours, the Liberty Bells are returning to the United States after turning over operational responsibilities to VAW-125 and the E-2D Advanced Hawkeye.

The transitions of VAW-115 and VAW-125 are part of the Navy’s strategic vision to place its most advanced aircraft in the Asia-Pacific region. VAW-115 and its 140

personnel will continue to support Navy carrier strike group operations while based at Naval Base Ventura, California.

“VAW-115’s sailors, aircrew and our families are all extremely grateful for the hospitality that we received from the people of Japan during our time at Atsugi, and for our outstanding partnership with the Japanese Maritime Self Defense Force,” said Cmdr. Christopher Hulitt, VAW-115’s executive officer.

VAW-115 first arrived in Japan in 1973. Since then, the Liberty Bells have played an integral role during numerous international events. From the late 1970s throughout the 1980s, VAW-115 made 11 deployments to the Indian Ocean and North Arabian Sea. VAW-115 deployed to the Persian Gulf in October 1990 and flew 179 combat sorties as part of Operations Desert Shield and Desert Storm. The squadron returned to the Persian Gulf in 2003 and flew more

than 350 hours in support of Operation Iraqi Freedom.

In November 2013, VAW-115 flew more than 80 hours in support of Operation Damayan, the multinational disaster response to Typhoon Haiyan in the Philippines.

Despite all its operational accomplishments, VAW-115 is most proud of the strong bonds they built in Japan, Hulitt said.

“I want to emphasize that one of our biggest accomplishments is the positive relationships we have developed with the Japanese people and our brothers and sisters in arms of the Japanese Self-Defense Forces,” he said. “It is tough to say ‘sayonara,’ but we know that the VAW-125 ‘Tigertails’ will continue to forge these bonds as a part of the U.S.-Japan strategic alliance.”

Written by H. Sam Samuelson, Naval Air Facility Atsugi Public Affairs. 

# Navy Announces Plan for First Operational F-35C Squadron

By Andrea Watters

The Navy plans to deploy its first operational F-35C squadron in 2021 with the aim of enabling future carrier strike groups (CSG) and numbered fleets to engage a wide range of rapidly evolving threats, according to the Navy's F-35C Fleet Integration Plan released in July.



*The pilot of an F-35C Lightning II carrier variant, assigned to the "Salty Dogs" of Air Test and Evaluation Squadron (VX) 23, receives directions from flight deck crew members aboard aircraft carrier USS George Washington (CVN 73).*

U.S. Navy photo by MC3 Jonathan Price

**T**he future carrier air wing will include two squadrons of F-35Cs and two F/A-18E/F Super Hornet squadrons. The deployment plan is based on an asset allocation study of the most efficient and effective composition of strike fighters, according to Rear Adm. Roy J. Kelley, director, Joint Strike Fighter Fleet Integration Office.

The F-35C's stealth characteristics—long-range combat identification and advanced capacity for penetrating threat envelopes while fusing information from multiple sources into a coherent picture—will enhance the roles CSGs and numbered fleets play in support of our national interests.

According to Kelley, the F-35C will provide speed, endurance and flexibility the CSG needs to operate autonomously in hostile environments.

"To balance modernization and readiness, the Navy is committed to selecting the right procurement ramp for F-35C to balance strike-fighter inventory management with the cost and time required to field advanced capabilities," Kelley said.

The Navy's long-term objective is to form 20 F-35C squadrons by the early 2030s, two squadrons for each of its 10 carrier air wings. The strategy will call for the continued procurement of low-rate, initial-production aircraft and the implementation of the enhanced capabilities of Block 3F software.

In addition, the plan calls for sustaining much of the current force to guarantee mission success against the threats of today and high-end threats of the future.

## Deterring the Advancing Threat

Today, near-peer adversaries are advancing technologically and economically at a rapid clip, resulting in the proliferation of highly capable air defense systems, high-performance aircraft and sophisticated information operations that include the following:

- Long-range air surveillance radars and airborne early-warning aircraft
- Long-range surface-to-air missiles
- Highly maneuverable, low-observable adversary aircraft
- Jamming and anti-jamming operations against communication, radar and GPS satellites.

If left unchecked, this threat proliferation could constrain the CSG's ability to project power, Kelley said.

As technologies advance, the future air wing must adapt and increase its capacity to contribute to the sea control mission with both kinetic and non-kinetic operations. The F-35C will be the CSG's first choice in such contested environments, providing a "day-one" strike capability.

While the day-one capability will allow the F-35C to perform at the "tip of the spear," its interoperability within the carrier air wing and unique ability to support and augment already fielded legacy platforms will be essential to sustaining the Navy's combat lethality, Kelley said.

In the near term, legacy aircraft will continue to make up a majority of the carrier air wing, but the information collected by F-35Cs will enhance the effectiveness and survivability of all sea, air and land platforms throughout the battle space.

If the carrier air wings of tomorrow are to outpace the proliferation of rapidly evolving threats, F-35C capabilities must achieve high levels of interoperability with existing ships and aircraft within CSGs and the numbered fleets.

Follow-on modernization for the F-35C program will continue to advance F-35C's capabilities—weapons integration, electronic warfare and real-time information sharing—to improve the aircraft's lethality and survivability across all mission sets.

The full integration of these capabilities within the CSG, combined with the F-35C's ability to distribute this information across multiple platforms within the fleet, is the cornerstone of how the Navy of the future will fight and win, Kelley said.

*Andrea Watters is the editor of Naval Aviation News.* 

# Naval Aviation Testers Receive DON Awards

By Jeff Newman

The Department of the Navy (DON) presented four of its 2016 Test and Evaluation (T&E) Awards to the Naval Air Systems Command (NAVAIR) in separate East and West Coast ceremonies May 24 and June 22, respectively.

**A**t Patuxent River Naval Air Station, Maryland, the CH-53K King Stallion Integrated Test Team received the DON Test Team Award for overcoming several major technical obstacles during its first year of flight testing, while Lt. Cmdr. Eric Martin received the DON Aspiring Tester Award in the military category for leading the development of a joint test plan for the P-8A Poseidon aerial refueling program. The program was recognized as the new “golden standard” across both Navy and U.S. Air Force leadership for how to certify aircraft receiving fuel midflight.

At Naval Air Warfare Center Weapons

Division (NAWCWD) in Point Mugu, California, Alex Ordway, a mission test engineer, received the DON Small Program Outstanding Tester Award for his work on the SeaVex/Perdix expendable micro-unmanned aerial vehicles while supporting the Strategic Capabilities Office, and Joseph Twesme, a chemical engineer, earned the award for Technical Excellence at a T&E Facility or Range as the lead infrared target modeling subject matter expert for the Weapons Environments and Simulation branch of the Integrated Battlespace Arena.

NAVAIR won four of the nine DON T&E awards, nominations for which came

from the six systems commands and all Navy and U.S. Marine Corps operational test agencies. DON Deputy for Test and Evaluation and acting Assistant Secretary of the Navy for Research, Development, Test and Evaluation Carroll P. “Rick” Quade presented the awards at both ceremonies.

“There is a challenge in understanding the value of our people,” Quade said at the June 22 ceremony in Point Mugu. “We have a national treasure in our workforce. I am constantly amazed at—and a little bit jealous of—how smart our folks really are.”

*Jeff Newman is a staff writer for Naval Aviation News.* 



U.S. Navy photo by Adam Skoczylas

*Lt. Cmdr. Eric Martin, accepts the DON Aspiring Tester Award from DON Deputy for Test and Evaluation Rick Quade May 24 at Naval Air Station Patuxent River, Md.*

## Lt. Cmdr. Eric Martin

Assigned as assistant project officer and assistant officer-in-charge for the testing of the P-8A as a boom aerial refueling receiver with the Air Force’s KC-135 Stratotanker, Martin was tasked with helping lead the Poseidon’s first government-led test project, as well as its first aerial refueling flight test certification. Most significantly, the project was the Navy’s first attempt at a boom aerial refueling flight test certification since the E-6A Mercury completed flight test in 1988.

Recognizing the lack of recent knowledge and experience in boom aerial refueling flight testing within the DON T&E community, Martin coordinated with developmental, operational and fleet-readiness squadrons, Air Force certification authorities, DOD engineers and contractors, and led a team of NAVAIR flight test engineers and test pilots in developing the technical expertise and skills required for operational aerial refueling, as well as the flight test techniques and data collection requirements necessary to certify the P-8A to receive fuel from the KC-135.

Despite taking on a test program the likes of which the Navy last attempted nearly three decades ago, Martin’s leadership and preparation resulted in a joint test plan that, according to the chairman of the Air Force’s technical review board, will serve as the new cross-service “golden standard” of how to execute certification flight test for receiver aircraft.

“Lt. Cmdr. Martin’s contributions to the DON T&E community set a new gold standard for Navy/Air Force tanker certification flight test and distinguished him as a rising leader in the DON flight test cadre,” Martin’s award citation stated. 

## Lt. Col. John Ennis

Ennis, government flight test director for the King Stallion, the Marine Corps' new heavy-lift helicopter platform, accepted the Test Team Award on behalf of the CH-53K test team—comprised of Air Test and Evaluation Squadron (HX) 21, the Integrated Systems Evaluation, Experimentation and Test department and Naval Air Warfare Center Aircraft Division.

"It's a culmination of a lot of work, from the government civilians to the contractors to the military folks, overcoming a lot of challenging obstacles to make for a successful year," Ennis said.

During its first year of testing, the team

relocated one of the King Stallion's inertial measuring units, which are necessary for navigation, to better stabilize the aircraft; fixed a design flaw that caused one of the three engines to flame out upon landing; and crafted a solution resolving engine bay overheating that allowed the test program to proceed as scheduled.

"We still have a long way to go, because we're not even 20 percent of the way through the program, but the fact that we've overcome what we have in the last year tells me that the team is able to accept any challenge and rise to the occasion," Ennis said. 



U.S. Navy photo



U.S. Navy photo by Kimberly Brown

## Alex Ordway

A NAWCWD mission test engineer and the only U.S. Navy member of the SeaVex/Perdix project team, Ordway earned the DON Small Program Outstanding Tester Award for his demonstrated expertise related to SeaVex/Perdix, expendable micro-unmanned aerial vehicles, while supporting the Strategic Capabilities Office. Ordway's "expertise, enthusiasm and dogged determination encouraged a small team of technical engineers and service members ... to combine and transform" existing Navy and Air Force systems, putting them into service in "ways the world has never seen before," according to his nomination by his supervisor, Kurt Statts.

The graduation exercise for Ordway's project was not only successful—it was conducted in front of a media crew from "60 Minutes." The exercise was a first-of-its-kind event that dispensed more than 100 Perdix micro-UAVs from three F/A-18Fs. The Perdix vehicles then executed a swarming mission demonstrating autonomous behaviors. 



U.S. Navy photo by Kimberly Brown

Rick Quade, DON Deputy for Test and Evaluation and acting Assistant Secretary of the Navy for Research, Development, Test and Evaluation, presents Joseph Twesme, left, with the 2017 DON Award for Technical Excellence at a T&E Facility or Range during a June 22 ceremony in Point Mugu, Calif.

## Joseph Twesme

Twesme, a chemical engineer at NAWCWD, "has dedicated his career to T&E of weapons systems in the areas of [infrared] scene generation, software-in-the-loop systems and hardware-in-the-loop systems," according to his nomination by coworker Robert Madsen. "His dedication, passion, sound engineering principles and contributions have made NAVAIR a leader in weapon systems test and evaluation."

On a personal note, Madsen said Twesme is enjoyable to work with.

"He is one of those super-smart guys who is passionate about his work," Madsen said. "He has original ideas, concepts and technical solutions, and he's also quick to lend a hand. 

# HSC-23 Expands Manned-Unmanned Integration with Fire Scout

By Lt. Michael DiDonato

The “Wildcards” of Helicopter Sea Combat Squadron (HSC) 23 made history in May when they flew MQ-8B Fire Scout unmanned air vehicles (UAV) from Naval Auxiliary Landing Field (NALF) San Clemente Island, California, using a mobile mission control station.

**T**eams of pilots, aircrew, maintenance personnel and civilian specialists worked together to complete integrated missions with various surface and air assets.

The two-week operation culminated in the successful employment of Fire Scout as the laser-designating platform for AGM-114N Hellfire missiles, which were fired from MH-60S Seahawk helicopters attached to HSC-23 Detachment 2 on board amphibious assault ship USS America (LHA 6).

Additionally, the team accomplished the first long-range transit of the Fire Scout by an operational squadron, executing a “control-station hand off” while transiting between NALF San Clemente Island and Naval Base Ventura County (NBVC) Point Mugu. This operation paved the way for the

future development of the Fire Scout program as a force multiplier for the larger naval surface community and the tactical application of integrated manned and unmanned platforms in Naval Aviation.

Personnel from HSC-23 began operations from NALF San Clemente Island May 3. Before this detachment, Fire Scout operators conducted all flight training at NBVC Point Mugu, approximately 175 miles northwest of San Diego. By bringing the system to NALF San Clemente Island, located 80 miles west of San Diego, there are many opportunities for integrated training with naval assets because of the multitude of ranges and support facilities around the island.

The detachment planned and coordinated events, overcoming an array of logistical hurdles, and established procedures for UAV operations within San Clemente Island airspace.

“A primary goal for this detachment was to showcase the capabilities of the MQ-8B,” said Lt. Cmdr. David Barnhill, officer-in-charge of the detachment. “San Clemente Island broadens the training opportunities for our Fire Scout team and gives us the ability to work with a multitude of assets not otherwise available.”

After completing unit-level training and confidence testing of



the MQ-8B system within local and special use airspace during the first week, Fire Scout crewmembers flew range clearance missions and a successful Hellfire missile event in support of USS America Amphibious Ready Group (ARG) May 10.

"The Hellfire shot was absolutely a highlight for this detachment. It proved that Fire Scout is a viable asset to an already potent team," Barnhill said. "But more than that, executing a successful in-flight transfer of the MQ-8B from one air vehicle operator to another more than 70 miles away was the biggest milestone. It gives us enormous operational flexibility going forward to work with fleet elements on a regular basis."

This detachment can be classified as a success, because it brings UAV operations to the fleet on a larger scale than before. The Fire Scout provides critical mission sets to enhance battlespace awareness as well as offers early warning detection and classification capability. HSC-23 is at the forefront of MQ-8B operations, driving the development and refinement of manned/unmanned tactics and providing a clear path for the future of Fire Scout operators.

HSC-23 is a Coronado-based expeditionary squadron under Commander, Helicopter Sea Combat Wing Pacific. It is the first squadron to deploy an MH-60S and MQ-8B composite detachment aboard an Independence-class littoral combat ship.

*Lt. Michael DiDonato is the public affairs officer for Helicopter Sea Combat Squadron 23.* 

***"Executing a successful in-flight transfer of the MQ-8B from one air vehicle operator to another more than 70 miles away was the biggest milestone."***



U.S. Navy photo by MC3 Trenton J. Kotlarz

*An MQ-8B Fire Scout unmanned air vehicle, top, conducts laser designation of an AGM-114 Hellfire missile for an MH-60S Seahawk helicopter attached to the amphibious assault ship USS America (LHA 6).*



*Sailors assigned to the "Wildcards" of Helicopter Sea Combat Squadron 23 prepare to move an MQ-8B Fire Scout unmanned air vehicle to the hangar bay aboard littoral combat ship USS Coronado (LCS 4).*

U.S. Navy photo by MC3 Deven Leigh Ellis

# CH-53K King Stallion: Most Powerful Helicopter in U.S.

By Liz Mildenstein

**A CH-53K King Stallion touched down at Naval Air Station (NAS) Patuxent River, Maryland, for the first time June 30. Relocated from Sikorsky's Development Flight Center in West Palm Beach, Florida, it is the first of seven aircraft expected to arrive over the next 12 months.**

**T**he flight was awesome," said U.S. Marine Corps Maj. Hayden Tyler Stevens, one of the CH-53K pilots for the ferry. "The in-route navigation, communications system and moving map made the flight easy."

Airborne for 6.2 hours over 810 nautical miles (NM), the flight was the longest yet for the platform.

At NAS Patuxent River, the CH-53K will run through various flight quality, ground and avionics assessments as the

program continues developmental testing. The ferry flight follows the Milestone C decision in March, which approved the program to proceed with low-rate initial production.

With four aircraft in test, the CH-53K as of July 5 had logged more than 475 cumulative flight hours. Initial operational capability remains on pace for 2019 and is defined as having four aircraft, with combat-ready crews, logically prepared to deploy.

The King Stallion is designed to

**“Even with all the new controls, flying the CH-53K is intuitive.”**

operate in high and hot environments, has expanded lift power, features modern pilot amenities and boasts a decreased logistical footprint.

"It is the most powerful helicopter our country has ever built," said Marine Corps Col. Hank Vanderborght, program manager for the H-53 Heavy Lift Helicopters program. "There is a lot to be excited about with this new aircraft, but the most obvious difference between the legacy [CH-53E Super Stallion] and the kilo [CH-53K] is the new helicopter's tremendous amount of lift power."

The CH-53K has more than triple the payload capability of its predecessor, made possible by increased engine power—enough to carry max gross weight at density altitudes over 3,000 feet—and a composite airframe, which is metal on the CH-53E.

In addition, a triple hook system allows the King Stallion to deliver three loads to three locations in one pass.

"That capability in itself makes the 53K the premier heavy-lift helicopter in the world," Vanderborght said.

Last year, the CH-53K successfully hovered with an external payload of 27,000 pounds at 100 feet, demonstrating the aircraft's capabilities in one of its most stressful lift requirements. It is designed to carry this high payload to a radius of 110 NM in high/hot ambient conditions. At lower payloads in less extreme ambient conditions, the range of the aircraft is much longer.

The internal payload has been improved as well, with one key upgrade being the CH-53K's compatibility with the U.S. Air Force's 463L Master Pallet, the standard pallet used to transport military cargo. The CH-53K can carry two of the pallets without having to break them down into smaller loads while transferring between airlifter and helicopter, as required with the CH-53E.

In addition to payload enhancements, pilots have the benefit of a modern glass cockpit featuring digital panels and full authority fly-by-wire flight controls and mission management. These features reduce

hover, position hold and precision tasks in degraded visual environments, and tactile cueing.

Stevens said even with all the new controls and "bells and whistles," flying the CH-53K is intuitive.

From a logistics perspective, the CH-53K was designed with the maintainer in mind. During the research-and-development phase, a working group of Marine maintainers and Sikorsky engineers discussed lessons learned from their experience with the CH-53E. This information was used to identify ways to reduce the maintenance man hours per flight hour. Improvements are seen throughout the aircraft, including the tail rotor gearbox, integrated vehicle health monitoring systems, fuel pump system and the fleet common operating environment (FCOE).

"The FCOE is basically a big data center where all of the information that comes off of the helicopter can be funneled to the engineers, logisticians and program managers," Vanderborght said. "From there, these stakeholders can efficiently analyze the data to make predic-

the pilot's workload, enabling the crew to focus more on mission execution.

"The human/machine interface and advanced control laws have the potential to make our more difficult tasks, such as dusty landings and low-light-level flying, easier and safer. The aircraft nearly flies itself," said Stevens, a CH-53K project pilot for the test program.

Pilot features include advanced stability augmentation, flight control modes that include attitude command-velocity hold, automated approach to a stabilized

tive decisions that ultimately increase performance and reliability."

With production expected to begin later this summer, the Department of Defense Program of Record remains at 200 CH-53K. The Marine Corps plans to stand up eight active duty squadrons, one training squadron and one reserve squadron to support operational requirements.

*Liz Mildenstein is a communications specialist supporting H-53 Heavy Lift Helicopter Program Office.* 

*The first CH-53K King Stallion to arrive at Naval Air Station Patuxent River, Md., touches down June 30 following a six-hour transit flight from West Palm Beach, Fla.*

U.S. Navy photo by Charles Freeman

# FAMILIAR FACE RETURNS



# TO FLIGHT LINE



By Jeff Newman

As the helicopter lifted off and took flight, the team of maintainers with Air Test and Evaluation Squadron (HX) 21 could scarcely believe what they had accomplished. Tasked to transform a stripped-down aircraft into a viable test asset, the team had accepted the challenge and delivered.

“**T**he men loved doing the work,” said Tony Weidner, maintenance material control officer at the Presidential Helicopter Support Facility (PHSF) at Naval Air Station (NAS) Patuxent River, Maryland. “They wanted something complex like this, something challenging, so they got a lot of satisfaction and pride out of that first flight, and the successful functional check flight. None of them looked the other way or had an attitude that this was beyond our capability.”

The flight marked the first time in more than four years that the NVH-3A Sea King—known as 614 in reference to its bureau number, 150614—had taken to the sky. Now a test bed, 614 entered service in 1972 with Marine Helicopter Squadron (HMX) 1. As one of the presidential helicopters known by the call sign “Marine One,” 614 transported Presidents Richard Nixon and Gerald Ford before joining Helicopter Combat Support Squadron (HC) 6 in 1976.

After accumulating 4,500 flight hours, the chopper was sent to the Military Aircraft Storage and Disposition Center at Davis-Monthan Air Force Base in Arizona for preservation from 1977 to 1984.

The aircraft eventually came out of storage, underwent depot maintenance, and in 1988 arrived at the Naval Air Test Center (NATC) at NAS Patuxent River. It remained a test vehicle until 2013, when it was slated to lead the fleet as the first test aircraft to undergo a cockpit upgrade program (CUP) in support of a major avionics change for the VH-3D Sea King, one of two aircraft types—alongside the VH-60N White Hawk—to currently serve as Marine One.

But the CUP was canceled before any actual upgrades were made, leaving 614 stripped down and in “an unusable state,” said Greg Baughman, lead test engineer for the Presidential Helicopters Program Office.

U.S. Navy photo by Adam Szozylas



U.S. Navy photo

Now a test bed (below), BuNo 150614 replicates the systems of a VH-3D presidential helicopter, without the furnishings (above) that greeted Presidents Richard Nixon and Gerald R. Ford when they boarded the Marine One helicopter.



U.S. Navy photo by Adam Skoczyński

"There weren't even any wires in it," said Tim Norton, the PHSF's maintenance officer.

Seeing the potential of the aircraft and the impact it would have as a test asset, the program office took a unique approach—in August 2014, the effort began to return 614 to service as a viable VH-3D test bed by tasking HX-21's maintainers.

It was an unprecedented challenge for a team accustomed to repairing aircraft.

"It's not what we're in the business of doing," Norton said. "Nobody does this here. Normally, this would have been an aircraft manufacturing thing."

"We're a test team," Baughman added. "We don't build airplanes."

"I don't know if NAVAIR has ever had a contract logistics support maintenance team do anything like that," Weidner said.

Parts, wiring, harnesses and engineering documents and support were ordered from the manufacturer, but the VH-3D components had to be modified to fit 614's NVH-3A airframe.

In all, HX-21 maintainers machined more than 200 custom parts, all of which had to go through engineering approval, said Dwight "Chic" James, the PHSF's quality assurance officer.

"We had to create a manufacturing quality assurance process, which is different than what we normally do in a maintenance environment," James said. "I don't know if anybody on that crew has done this volume of work on a particular aircraft."

The crew ultimately installed a new powerplant, drivetrain, rotors, landing gear, and electrical, avionics and fuel systems, all of which were different from 614's previous components.

The end result was a test aircraft that more closely replicated its fleet version.

"Before, the aircraft had some VH-3D-like systems in racks. The avionics were in racks in the cabin and that's how they had to use them," James said. "The right-hand side of the cockpit was the only VH-3D portion, and now the entire ship is essentially a VH-3D aircraft."

Now when a test pilot gets in 614, it mirrors what he's going to see in the real thing, minus the carpet and furniture that greet the president on Marine One.

"But we do have air conditioning coming," Norton said.

Norton praised James and his quality assurance team for writing an exhaustive list of special step-by-step procedures and checkpoints, which resulted in a pristine aircraft.

The work tested the maintainers, but “when it was done, I think it gave us the warm, fuzzy feeling that everything had been touched and looked at, and when we started inspecting the airplane we just didn’t find stuff wrong,” Norton said.

As with any challenging task, there were days when the team wasn’t quite sure how everything would be accomplished.

“There were doubts up until the day it flew,” Baughman said.

So when 614 finally hovered again for the first time April 4, it was a good day for the team. “It was definitely a weight lifted off everybody’s shoulders,” Norton said.

The return of 614 to the flight line at NAS Patuxent River carries sentimental value for Glenn Perryman, whose father flew the aircraft as HMX-1’s Commanding Officer from 1971 to 1974 (*see sidebar*).

“It’s kind of like a continuation of my dad’s legacy,” said Perryman, deputy program executive officer for Air Anti-Submarine Warfare, Assault, and Special Mission Programs. “They did an incredible job on that aircraft. They completely tore it down and rebuilt it, and the word from the program office is that it’s ‘immaculate.’”

Baughman said there are active projects on 614 now, including operational flight program updates, a lighting program, and upgrades to the VXP system, which performs rotor track and balance.

“The big thing is having a test bed asset like this means we’re not borrowing an in-service presidential helicopter to get that testing done,” he added. “The contractor doesn’t have one; we’re the only game in town if you want to fly something on a surrogate VH-3D.”

“Professionally, it’s quite an accomplishment, and definitely something to be proud of, given the challenge that was put forth to the group,” Baughman said.

Jeff Newman is a staff writer for Naval Aviation News. 



U.S. Navy photo by Emanuel Cavallaro

Deputy Program Executive Officer for Air Anti-Submarine Warfare, Assault, and Special Mission Programs Glenn Perryman scans one of his father’s flightlogs, which detail every flight James Perryman Jr. took during his decorated career as a Marine helicopter pilot.

## Logbooks Reveal Legacy

As commanding officer of Marine Helicopter Squadron (HMX) 1 from 1971 to 1974, Col. James Perryman Jr. served as President Richard Nixon’s pilot during the bulk of the 37th president’s term. Perryman moved into acquisition in July 1974, weeks before Nixon’s resignation that August.

Prior to his stint as CO, Perryman deployed to Vietnam in 1961 and served two combat tours before joining HMX-1 in 1966 during Lyndon B. Johnson’s presidency. He returned to Vietnam in 1970 before reporting back to command HMX-1 a year later.

A member of the U.S. Naval Academy’s Class of 1955, Perryman’s flight logs show he flew 614 a handful of times, including two “presidential lift” missions in December 1971. His son, Glenn Perryman, deputy program executive officer for Air Anti-Submarine Warfare, Assault, and Special Mission Programs, said it was “a great feeling” when he heard the Presidential Helicopters Program Office was restoring a helo his father flew.

“As a kid, it was the neatest thing in the world, knowing your dad flew the president,” Glenn Perryman said. “And now, this is kind of like a continuation of my dad’s legacy.”

Perryman died New Year’s Eve

2013 at the age  
of 80. 



Photo courtesy of Glenn Perryman

Commanding Officer of Marine Helicopter Squadron (HMX) 1 from 1971 to 1974, James Perryman Jr., right, served as President Richard Nixon’s pilot. Perryman’s flightlogs, left, show he flew Nixon aboard BuNo 150614 twice in December 1971.

# NAWCAD Cargo Lab Refines Skid



U.S. Navy photos by Emanuel Cavallaro

*Joe Matthews, Naval Air Warfare Center Aircraft Division (NAWCAD) cargo fabricator and design technician, operates a forklift as Mike Jackson, cargo special operations engineer (left) and Brandon Norris, structures engineer, work to position a trailer to unload an F-35 power module onto a V-22 Osprey.*

*By Emanuel Cavallaro*

**It took about half a day and the efforts of a small team and a forklift to move an F-35 Lightning II engine power module from its shipping container into the fuselage of a V-22 Osprey during a May 24 load demonstration at Naval Air Station Patuxent River, Maryland.**

**F**rom this demonstration, we expect that with improvements to loading processes and a future transport vehicle, a small team will be able to do what we did here today in about an hour and a half,” explained Todd Anderson, team lead for Naval Air Warfare Center Aircraft Division (NAWCAD) cargo and special operations team.

With the first deployment of the F-35B scheduled for fiscal year 2018, planning

is already underway to make room for the aircraft in the U.S. Navy’s supply chain. Of particular concern is the power module of the F-35 engine, which poses a significant logistical challenge to the Navy’s shore-to-ship link.

While the H-53 heavy-lift helicopter can carry the power module by external lift 50 nautical miles or so, the Osprey, a tilt-rotor aircraft, can transport it up to 1,000 nautical miles. But the Navy must first load the component onto the aircraft, a complicated undertaking the Navy is still figuring out.

Because of the component’s immense size and weight, many initially believed the part would have to be supplied to carriers by ship, but Anderson’s team showed in 2014 it could be supplied by carrier onboard delivery (COD). The difference in the speed of delivery is a matter of days.

“They don’t have the luxury of that [days-long delivery time],” Anderson said. “The V-22, when it comes to COD, is like a big FedEx in the sky.”



*Brandon Norris, NAWCAD structures engineer, judges the clearance between the V-22 and F-35 power module as its trailer is moved into position before winching.*

That year, they loaded and transported the power module on an Osprey to USS Wasp (LHD 1), using a prototype skid designed by Pratt & Whitney—the F-35 engine’s manufacturer—to keep the engine power module secure during transport by vehicle, as well as during flight inside the aircraft, where it was tied down in the fuselage.

Altogether, the module and the skid weighed 9,350 pounds, so heavy the team had to make use of a rare trailer—only two are in existence—that was originally used to load 10,000 pounds of ballast at a time during flight tests for the CH-53K King Stallion.

“There were a lot of people who didn’t think the V-22 could do it,” Anderson said, “but we made it happen.”

The 2014 load demonstration was not without some hitches, however. During the demonstration, the team of engineers and Marine Corps crew chiefs discovered the skid’s dimensions weren’t entirely compatible with the aircraft.

# for F-35 Engine Power Module



*Mike Jackson, NAWCAD cargo special operations engineer, monitors side clearances as the power module on its skid is loaded onto the Osprey.*



*Inside the Osprey cargo cabin, NAWCAD cargo special operations engineers Tom Stolt (left) and Michelle Hoefer work to align the power module on the skid as it is winched up the ramp.*

The May 24 demonstration at NAVAIR's cargo lab was meant to improve and streamline the process. The team worked with Pratt & Whitney to fine-tune the skid, which is now 6 inches narrower, a half-inch shorter and reduced in length by 14 inches.

The team also reduced the weight of the skid significantly, dropping the total weight of the module with the skid to approximately 7,100 pounds.

Over the course of several hours, the team of engineers and Marine Corps crew chiefs lifted the module from its shipping container with a crane, dropped it onto the skid attached to a trailer, towed the trailer to the V-22's cargo ramp, and then loaded the module and skid carefully into the Osprey and tied it down.

Thanks to the demonstration and Anderson's team working out the steps and determining the optimal dimensions of the equipment, the procedure will move much faster and require fewer people during future cargo operations.

According to Anderson, the next step will be designing and constructing a loading device that can do what the trailer did—load the skid and module into the Osprey.

"It's not a dream anymore," Anderson said. "We're pretty much done. Now it's just about getting all the procedures down."

*Emanuel Cavallaro is a staff writer for Naval Air Systems Command Public Affairs.* 

**"There were a lot of people who didn't think the V-22 could do it, but we made it happen."**



U.S. Navy photo by MC3 Tyler Preston



U.S. Navy photo by MC2 Gitte Schirmacher



*Chief Yeoman Berwyn Tinnion, far right, assigned to aircraft carrier USS Gerald R. Ford (CVN 78), sings the national anthem during the ship's commissioning ceremony at Naval Station Norfolk, Va.*

# WELCOME TO THE FLEET USS Gerald R. Ford



## Navy commissions lead ship of first new carrier class in more than 40 years

With President Donald Trump on hand, the U.S. Navy commissioned USS Gerald R. Ford (CVN 78), the lead ship of a new class of nuclear-powered aircraft carriers, during an onboard July 22 ceremony in Norfolk, Virginia.

Named in honor of the nation's 38th president, Ford is the first carrier to join the fleet since USS George H. W. Bush (CVN 77) in 2009. The Ford class represents the Navy's first new carrier design since USS Nimitz (CVN 68) was commissioned in 1975 and will begin the phased replacement of Nimitz-class carriers.

The Navy received Ford on May 31, five days after the carrier successfully completed acceptance trials. It features a new nuclear power plant, propulsion system, an Advanced Arresting Gear, machinery control, Dual Band Radar, integrated warfare systems and an enhanced flight deck capable of increased aircraft sortie rates.

Ford's redesigned island is set farther aft than on Nimitz-class carriers, providing more usable space on the flight deck and which results in more efficient flight preparations, launches and recoveries.

The Ford class also comes with new electromagnetic catapults—the Electromagnetic Aircraft Launch System (EMALS)—which will be able to launch more types of aircraft, from heavy strike fighters to light unmanned drones, than traditional steam-powered catapults.

*To the command, "Man our ship and bring her to life," Ford Sailors run up the brows and man the rails as the band plays "Anchors Aweigh."*

U.S. Navy photo by MC2 Andrew J. Sneeringer



U.S. Navy photo by MC3 Sean Elliott

*Sailors assigned to aircraft carrier USS Gerald R. Ford (CVN 78) stand at parade rest during the ship's commissioning ceremony.*

*“The Sailors aboard today are among our nation’s finest—they are talented, driven, innovative, dedicated and passionate about what they do, and I am very proud to be their commanding officer.”*

—Capt. Rick McCormack



Sailors man the rails of aircraft carrier USS Gerald R. Ford (CVN 78) during its commissioning ceremony.

U.S. Navy photo by MC3 Julio Martinez Martinez



U.S. Navy photo by MC2 Anna-Liesa Hussey

Sailors talk before aircraft carrier USS Gerald R. Ford's (CVN 78) commissioning ceremony.

Ford’s new Advanced Arresting Gear (AAG) will be able to recover future aircraft that will require capabilities beyond that of the arresting gears on Nimitz-class carriers.

Crew members will also find increased comfort aboard Ford, with its wider passageways, increased air conditioning and brighter lighting. Redesigned quarters provide better privacy and easier access to restrooms and showers, while recreation and television areas have been relocated to separate spaces to ensure sleeping Sailors have consistent quiet.

All told, Ford-class carriers boast more than 23 new or modified systems compared to the 10-ship Nimitz class, innovations that are expected to improve Sailors’ quality of life, reduce maintenance and improve operational availability and capability.

Such improvements also mean Ford-class carriers will operate with smaller crews than their predecessors in the Nimitz class.

Nicknamed “Wolverine” after the mascot of President Ford’s alma mater, the University of Michigan, CVN-78 is expected to be operational in 2020.

Trump landed on Ford's flight deck in Marine One and was greeted by Defense Secretary Jim Mattis, Acting Secretary of the Navy Sean Stackley, Chief of Naval Operations Adm. John Richardson, and Capt. Rick McCormack, Ford's Commanding Officer.

Trump called the ship an American symbol of power and prestige wherever it sails in the world.

"Wherever this vessel cuts through the horizon, our allies will rest easy and our enemies will shake with fear, because everyone will know that America is coming and America is coming strong," he said.

Mattis deemed Ford a "magnificent warship [that] joins the best Navy in the world."

"The nation's going to be very proud of USS Gerald R. Ford," Richardson said ahead of the ceremony. "I am incredibly thankful for the shipyard workers and Sailors who worked amazingly hard to bring this mighty ship to life ... The new technology and warfighting capabilities that Ford brings will transform naval warfare, making us a more lethal Navy. The increased combat power will enable new ways to combine information, ships, aircraft and undersea forces, changing how we operate and fight."

McCormack expressed pride in the work his crew has done to get the ship ready to serve in the fleet.

"The Sailors aboard today are among our nation's finest," McCormack said. "They are talented, driven, innovative, dedicated and passionate about what they do, and I am very proud to be their commanding officer. Team Wolverine, I have the utmost faith and confidence in your abilities to handle any challenge ahead, and I can think of no better team to take this ship to sea."

More than 10,000 service members and their families, senior defense and military officials, and other dignitaries—including Susan Ford Bales, Ford's daughter and the ship's sponsor—watched the festivities from the hangar bay, pier and adjacent USS Dwight D. Eisenhower (CVN 69).

"This ship is the deterrent that keeps us from having to fight in the first place," Trump said. "But this ship also ensures that if a fight does come, it will always end the same way. We will win ... we will never lose."

At the ceremony's conclusion, Bales gave the traditional command to "man our ship and bring her to life," prompting Ford Sailors to run up the brows and man the rails as the band played "Anchors Aweigh."

Afterward, the ship was opened to the general public for tours, of the flight deck, commanding officer's in-port cabin, pilot house, mess decks, fo'c'sle and newly opened tribute room.

*Compiled from articles by Terri Moon Cronk of DoD News and USS Ford public affairs officer Ens. Corey Todd Jones, and a Navy Live blog post by Rear Adm. Bruce Lindsey, Commander, Naval Air Force Atlantic.* 



U.S. Navy photo

A crane moves the lower stern into place on future aircraft carrier USS John F. Kennedy (CVN 79) at Huntington Ingalls Shipbuilding in Newport News, Va.

## Next Up: USS Kennedy

The commissioning of USS Gerald R. Ford (CVN 78) marked the first time the U.S. Navy had inducted a new aircraft carrier into its fleet since 2009, when USS George H.W. Bush (CVN 78) was commissioned.

With construction on the future USS John F. Kennedy (CVN 79) already well underway at Huntington Ingalls Shipbuilding in Newport News, Virginia (see above), the wait shouldn't be nearly as long for the second Ford-class carrier.

Two years after her keel was laid in August 2015, Kennedy is more than 50-percent structurally complete and on schedule to commission in 2020.

The Navy plans to spend \$43 billion on developing and building the Ford class, which includes a third ship, the future USS Enterprise (CVN 80). The shipbuilder, Huntington Ingalls Industries, has begun work on Enterprise, with construction set to begin next year. 



U.S. Navy photo by MC2 Nathan Burke

# Navy Outlines Requirements for Stingray UAS

By Jeff Newman

**Committed to bringing unmanned aircraft to its carrier decks, the U.S. Navy released its draft request for proposals (RFP) for engineering, manufacturing and development of the MQ-25A Stingray air system in July.**

In making the MQ-25A the first carrier-based unmanned aircraft system (UAS) aboard its carrier fleet, the Navy plans to leverage existing programs and industry investments to reduce cost and expedite development of the Stingray.

With a primary mission to serve as an aerial refueling tanker, the Stingray will extend the range of the carrier air wing (CVW) and allow the Navy to make better use of its combat strike fighters.

"The MQ-25 needs to be able to deliver a robust fuel offload at range to support an extension of the air wing and add flexibility over what's out there today from a mission tanking perspective," said Capt. Beau Duarte, MQ-25 program manager.

The USS Dwight D. Eisenhower (CVN 69) and USS George H.W. Bush (CVN 77) are planned to be the first two carriers to receive installed MQ-25 development and test systems, but it has not been determined which carriers will be the first to deploy with the Stingray.

Releasing the draft request allows the Navy to obtain feedback from potential bidders that could potentially make the final RFP more clear and effective.

"CNO tasked our team to generate a

unique and innovative acquisition approach to accelerate the program," said Rear Adm. Mark Darrah, who oversees the Program Executive Office for Unmanned Aviation and Strike Weapons. "This program has had more industry engagement in drafting the RFP than typical programs, and we expect that we will get a much more focused and mature industry proposal."

The four bidders are The Boeing Company, General Atomics Aeronautics Systems Inc., Lockheed Martin Corp., and Northrop Grumman Systems Corp.

The Navy intends to issue the final RFP during the fourth quarter of fiscal year 2017, with the goal to issue the contract to a single bidder a year later. The Navy plans to buy four test aircraft and field the MQ-25 by the mid-2020s.

The Stingray is composed of three segments—the air vehicle, its control and connectivity systems, and its integration into carrier-based operations. The draft and final RFPs are only for the design, development, delivery and testing of the air vehicle, as well as its integration with the overall MQ-25A system. The Stingray will be the first air system procured by the Unmanned Carrier Aviation Program Office.

*Jeff Newman is a staff writer for Naval Aviation News.* 



*Chief of Naval Operations Adm. John Richardson (foreground, second from left) tours MQ-25's ground control station lab July 18 at NAS Patuxent River, Md.*

# 4th Marine Aircraft Wing Reinforces Active-Duty Marine Aviation

By 4th Marine Aircraft Wing Public Affairs

Tragedy struck Haiti early Oct. 4 as Hurricane Matthew, the first Category 4 storm to hit the island in more than 50 years, wiped out roads, farmlands and infrastructure, destroyed thousands of homes, and left many Haitians homeless and desperate for help. Fortunately, U.S. Marines with Joint Task Force Matthew arrived quickly with aid a day after the storm lifted.

In the ensuing weeks, Marines delivered 478,000 pounds of food, first aid supplies and other critical provisions to Haiti's most affected citizens. Having trained to coordinate with partner nations throughout Central and South America specifically for missions like this, the "Hustlers" of Marine Heavy Helicopter Squadron (HMH) 772, a Marine Reserve heavy-lift squadron attached to the Special Purpose Marine Air Ground Task Force (MAGTF) Southern Command, were poised for duty. By employing a forward presence, the Special Purpose MAGTF was geographically and operationally prepared to deliver needed humanitarian assistance and disaster relief.

The Marine Corps Reserve and its aviation combat element, the 4th Marine Aircraft Wing (MAW), combine to make a coordinated operational force. Every day, Marines of 4th MAW fight, support and train alongside their active-duty brethren.

## Marine Corps Reserve History Steeped in Sacrifice, Dedication

The Marine Corps Reserve and its aviation element were both established during World War I. With minimal preparation, they earned their skills with

scars from on-the-job training and trials by fire on battlefields such as Belleau Wood, Iwo Jima and later, Korea. For this reason, the history of Marine Corps Reserve aviation exemplifies sacrifice and dedication. Adaptability is organic to 4th MAW, as they must hone, modify and apply their skills to each mission.

In 2002, then-Lt. Col. Bradley James commanded a Marine Aerial Refueler Transport Squadron (VMGR) 234 detachment that was "chopped" to the 3rd MAW, an active duty command, and deployed to the Middle East. Ultimately, that detachment was reassigned to the 13th Marine Expeditionary Unit (MEU) (Special Operations Capable) and participated in combat operations in Afghanistan.

James and his Marines helped the 13th MEU overcome the "tyranny of distance"—the MEU was based on ships operating in the Arabian Sea, more than 400 miles from the forward-operating base they supported at Camp Rhino in Afghanistan. Moving Marines and supplies this far was a significant challenge that required combining the capabilities of both the KC-130 Hercules, which provided tactical airlift in addition to its primary aerial-refueling mission, and the CH-53 Sea Stallion, the Marine Corps' heavy lift helicopter. Because small-





*U.S. Marines with Special Purpose Marine Air-Ground Task Force Southern Command embark aboard CH-53E Super Stallion from Marine Heavy Helicopter Squadron (HMH) 772, Marine Aircraft Group 49, 4th Marine Aircraft Wing and depart to Grand Cayman Island, ready to support U.S disaster relief operations in the Caribbean in response to Hurricane Matthew in October 2016.*



*A CH-53E helicopter from HMH-772 makes the flight from Honduras to Haiti as part of the Hurricane Matthew response, bypassing a lonely island on the otherwise empty route over the Caribbean Sea.*

United States Marine Corps photo by Sgt. Ian Ferro



*A Marine from HMH-772 looks out the window of a CH-53E Super Stallion during a training mission over the Atlantic Ocean.*

U.S. Air Force photo by Senior Airman Lauren Pitts

arms fire and rocket-propelled grenades targeting air crews presented significant tactical challenges, most missions were flown at night.

The Reserve KC-130T “Battle Herc” provided tactical assault support by delivering ammo and other supplies over longer distances. It also brought cargo closer to the battlefield and helped refuel aircraft at lower altitudes, where aircraft are subjected to more turbulence. In addition, the plane’s night-vision capabilities allowed Hercules air crews to perform these tasks in the dark.

To perform these missions, VMGR-234 employs a cadre of experienced Reserve pilots who draw on skills honed in their previous active-duty careers and their current civilian jobs as commercial pilots. They spend time training aggressively with their active-duty counterparts all year.

Today, James commands the 4th MAW as a brigadier general. After learning to fly many variants of the KC-130 aircraft on active duty, he joined the

Reserves in 1993 and has matched his skills to the MAW’s evolution for the better part of his Reserve career, giving him a unique perspective on the MAW.

“We used to prepare for the ‘big one,’” James said, referring to the Cold War-era focus on large-scale engagements with a major adversary.

Those plans came to fruition during the invasion of Iraq, which evolved into a counterinsurgency and required the Marine Corps to adapt. The 4th MAW Reserve units were called on to integrate with active duty, forming elements ranging in size from small detachments to complete squadrons.

## **“We Operate Every Day”**

Col. J. Braatz, Commanding Officer of Marine Aircraft Group (MAG) 49, 4th MAW, has a unique perspective on the Marine Corps’ evolution over the past 20 years. He serves as the example of a combat-weathered, active-duty Marine whose experience and skills are crucial

**"These relationships are mutually beneficial—active-duty Marines benefit from much-needed support of daily, operational requirements, and Reserve Marines benefit from the experience of supporting those requirements"**

to the development of the Reserve MAW. The Marine Corps Reserve employs of Marines who are currently on active duty to help 4th MAW reservists prepare for war. The 4th MAW uses this training to maintain and operate millions-of-dollars worth of aircraft every day.

Braatz spent the majority of his career with the active component. Recognizing his talent, the Marine Corps chose him in June 2016 to command MAG-49, a Reserve unit, marking his second stint with 4th MAW. (From 2009 to 2011, he commanded a Reserve helicopter detachment in Belle Chasse, Louisiana.)

Braatz shares his unique perspective on the relationship between active-duty and Reserve Marines and how that relationship has changed: "The line between Selected Marine Corps Reserve [drill-ing] reservists and active duty has really dissipated," he said. "There is hardly any space between us now."

Braatz explained that through combat operations during Operations Iraqi Freedom and Enduring Freedom, as well as

ongoing relationships between the active and Reserve forces, a level of trust has developed that did not exist previously.

While that trust was initially formed in the deserts of Iraq and the mountains of Afghanistan, it is now sustained by enduring, habitual relationships between active-duty and Reserve Marines that are fostered daily.

"We operate every day," Braatz said. "We have to fly aircraft every day. We have to fix aircraft every day."

He explained how MAG-49 integrates with other MAGs throughout 2nd MAW, an active-duty command. "We try to do joint operations, provide a place for them to come and train with us," he said. "We maintain their aircraft; they maintain ours. They have developed memorandums of agreement with the MAGs in 2nd MAW."

The daily interaction between MAG-49 and the MAGs of 2nd MAW is not unique. Those relationships exist throughout 4th MAW, both inside and outside the United States.



*U.S. Marine Corps crew master assigned to Marine Aerial Refueler Transport Squadron (VMGR) 234, observes an aerial refuel training operation from the back of a KC-130J Hercules on Feb. 23. VMGR-234 assisted Marine Heavy Helicopter Squadron 464 in the training to maintain interoperability.*

*A KC-130T with Marine Aerial Refueler Transport Squadron (VMGR) 234, Marine Aircraft Group 41, 4th Marine Aircraft Wing, flies in formation on the way to Fort Campbell, Kentucky. Upon landing at Fort Campbell, VMGR-234 conducted an aviation-delivered ground refueling mission in cooperation with the Army 160th Special Operations Aviation Regiment.*



U.S. Marine Corps photo by Lance Cpl. Kirstin L. Henning

Marine Air Control Group (MACG) 48, which owns all of 4th MAW's aviation command and control agencies, integrates routinely with MACG-18, its active duty counterpart under the 1st MAW in Okinawa, Japan, said Col. Paul Weaver, MACG-48 Commanding Officer.

"MACG-48 looks at itself as MACG-18's other half," Weaver said. Any time that combatant command conducts an exercise or operation, he explained, Reserve Marines from MACG-48 integrate throughout MACG-18.

Fortunately, many of these opportunities exist each year in major security cooperation exercises such as Ulchi Freedom Guardian or Key Resolve. In these operations, MACG-48's Reserve Marines are eager to contribute their relevant historical knowledge and wealth of experience, which are used to create operational plans and mission sets.

These relationships are mutually beneficial—active-duty Marines benefit

from much-needed support of daily, operational requirements, and Reserve Marines benefit from the experience of supporting those requirements. As part of a total force that faces readiness challenges, active-duty units cannot support every requirement, allowing 4th MAW units to step in and gain valuable experience. Over multiple evolutions, 4th MAW units have become the preferred, go-to solution for Marine forces commanders and their operational planners.

## Maximizing Training Time

To Reserve Marines, who must meet the same standards as their active-duty counterparts, maximizing training time is critical. The 4th MAW employs creative and efficient methods to accomplish this task. Combining drill time and using extended annual training periods and short-term active-duty operational support orders allow 4th MAW units to provide critical operational support to the

active component, while giving Reserve pilots much-needed flight hours.

The units also leverage traditional Reserve training opportunities, such as drill weekends and two-week annual training periods. For example, MACG-48 synchronizes drill periods to provide training opportunities to units scattered from coast to coast across the United States. During these drill periods, command and control skills are practiced in an environment where units are geographically dispersed, just as they are on the modern battlefield.

One of the unique ways 4th MAW integrates aviation training and readiness efficiently is by flying as aggressor squadrons. Marine Fighter Training Squadron (VMFT) 401, a Reserve squadron, currently performs the role of an aggressor, or adversary, squadron. As such, they work hard to keep up with the ever-increasing demands of training both Reserve and active-duty squadrons.



U.S. Marine Corps photo by Lance Cpl. Ashley Phillips

F-5N Tiger II jets stand by on the flight line aboard Marine Corps Air Station Beaufort, S.C. Marine Fighter Training Squadron (VMFT) 401 worked with Marine Aviation Weapons and Tactics Squadron (MAWTS) 1 to conduct the Marine Division Tactics Course at the air station. VMFT-401 provided the adversary air while the MAWTS-1 instructor pilots taught and evaluated MCAS Beaufort F-18 pilots during the course. Both VMFT-401 and MAWTS-1 are stationed aboard MCAS Yuma, Ariz.



U.S. Marine Corps photo by Cpl. Lauren Whitney

Two F/A-18 Hornet Marine aircraft park aside a Strategic Expeditionary Landing Field during Integrated Training Exercise 4-14 (ITX) aboard Camp Wilson, Twentynine Palms, Calif. A cornerstone of the Marine Air-Ground Task Force (MAGTF) Training Program, ITX is the largest annual U.S. Marine Corps Reserve training exercise that sharpens skills and planning guidance for Reserve units. ITX employs assets from ground, air and logistics combat elements to demonstrate the ability to deploy rapidly and build up significant combat power necessary to form a MAGTF.

"We probably have some of the most proficient pilots in the Marine Corps as far as air combat tactics," said Maj. Luke Knorra, a former F/A-18 pilot who serves as an instructor at VMFT-401. Knorra explained the unit leans on its pilots' combat experience, which creates "massive experience in the ready room."

One reason for the increasing demand is to train all the new F-35B pilots as the Joint Strike Fighter integrates into the Marine Corps.

VMFT-401 regularly sends a detachment to Marine Corps Air Station Beaufort, South Carolina, to perform the aggressor role for Marine Fighter Attack Training Squadron (VMFAT) 501, which trains all new F-35B pilots.

"We are tasked with being one of the sole training aids to VMFAT-501," Knorra said.

In addition, 4th MAW also operates

fraction of the time. They balance their military careers with a civilian occupation, school and family. Although the standard Reserve Marine's training consists of 48 drill periods and two weeks of annual training per year, usually more time is demanded of them, and 4th MAW Reserve Marines dedicate this additional time selflessly.

"What we have found is that it takes longer for our maintainers and aircrew to gain the same qualifications as their active-duty counterparts, which is normal, because they train less often," said Master Gunnery Sgt. Ronald C. Gooden, senior maintenance chief at 4th MAW's Aviation Logistics Division. "However, once they get those qualifications, then their 'op tempo' can far exceed what is considered normal for a reservist."

Gooden said a large part of his job entails getting orders approved for

the drilling reservists to spend idle time at home," he said.

Like Mills, Torrell spent several years on active duty before transferring to the Reserve component. While on active duty, he deployed to Iraq twice and Afghanistan once. He considers his deployments as a Reserve Marine to be his most satisfying.

In 2013, he deployed to Okinawa for six months as part of the Unit Deployment Program established in 1977 to allow units to gain operational experience. Last year, Torrellas deployed again, this time to Honduras as a member of the Special Purpose MAGTF-Southern Command. He served alongside many Reserve Marines, supporting the crisis response efforts in Haiti when Hurricane Matthew hit.

"It was rewarding on a different level," he said of that mission. "I appreciated my time in Iraq and Afghanistan, but you get a different kind of satisfaction from this."

## **"The Marine Corps is the nation's expeditionary force in readiness and must be ready to fight at a moment's notice. The Marine Corps Reserve is an operational force that reinforces, supports and augments the total force. As such, 4th MAW is more relevant to the Marine Corps than ever."**

with other Reserve units. In June, 4th MAW participated in the fifth integrated training exercise aboard the Marine Corps Air-Ground Combat Center in Twenty-Nine Palms, California. This live-fire exercise comprised, Reserve units from the ground combat, aviation and logistics elements under the command of a regimental headquarters. It serves as an important component of the Marine Corps Reserve's "Training and Readiness Plan," which employs five-year cycles so that, at any given time, the Reserve component has 3,000 Reserve Marines ready to fight.

### **The Reserve Marines in 4th MAW**

Reserve Marines face unique challenges. Although they meet the same, unwavering standards required of all Marines, they are forced to meet them in just a

active-duty operational support and extended annual training to provide this additional time.

"You get out of it what you put into it," said Capt. Stephanie Mills, who recently became the first Reserve Marine to graduate from the Weapons and Tactics Instructor Course in nine years.

"I take on more, and I study in my free time," said Mills, a Reserve air support control officer with Marine Air Support Squadron 6, MACG-48. Her duties as a drilling reservist involve more than one drill weekend a month and two weekends a year, but with that increased demand for her time comes increased satisfaction.

Staff Sgt. Derek Torrell, who serves as a Reserve crew chief with HMH-772, echoed those sentiments when describing the need to maintain currency between drill periods. "We don't want

### **Poised for the Future**

The Marine Corps is the nation's expeditionary force in readiness and must be ready to fight at a moment's notice. The Marine Corps Reserve is an operational force that reinforces, supports and augments the total force. As such, 4th MAW is more relevant to the Marine Corps now than ever. Its men and women train, integrate and operate with the active component every day in each combatant command across the globe.

"My job as commanding general is to serve as a provider. My job is to get our units and Marines ready to go do great things," James said.

And his Marines are ready for that next fight, whenever and wherever it occurs.

*Written by 4th Marine Aircraft Wing Public Affairs.* 



# NAVY PILOT TAKES ON Air Force's F-35

*By U.S. Air Force Staff Sgt. Peter Thompson*



U.S. Air Force photo by Staff Sgt. Peter Thompson

*U.S. Navy Lt. Cmdr. Charles Escher*

**A**s he stands at the step desk, the differences in Lt. Cmdr. Charles Escher's uniform are hard to miss. His brown leather boots seem foreign next to the sage green footgear of those accompanying him.

The custom among the pilots of the Air Force's 58th Fighter Squadron is to roar "RAGE!" throughout the building, but today Escher is given a more fitting send-off, marching out of the building as "Danger Zone" blares in the background.

Rather than taking his familiar path to an F-35C Lightning II emblazoned with the scythe-wielding grim reaper of Strike Fighter Squadron (VFA) 101, today, Escher will beat his chest and fly with the 58th's "Mighty Gorillas."

For only the second time at Eglin Air Force Base near Valparaiso, Florida, a naval aviator has been selected to dual qualify in the U.S. Navy's F-35C and the Air Force's F-35A. As VFA-101's operations officer, Escher was chosen to fly the Air Force's F-35 variant because of his knowledge and experience across a wide variety of aircraft.

Escher experienced the F-35A for the first time during his initial flight on Dec. 1, followed by a check ride the next week with Col. Lance Pilch, 33rd Fighter Wing commander.

"[This is] hopefully the start of a program where we have pilots crossing over to help each other by teaching and learning tactics and determining things we can improve, thereby making the squadrons operate more smoothly together," Escher said.

Escher knew from a young age he wanted to fly for the Navy, but he wasn't fully



*U.S. Navy Lt. Cmdr. Charles Escher taxies an F-35A prior to flying a check ride sortie.*

U.S. Air Force photo by Staff Sgt. Peter Thompson

committed to pursuing a career as a pilot until his first day at the U.S. Naval Academy, when two F-14 Tomcats flew overhead as his class completed its oath of office.

"Very loud and very fast," he recalled, a smile widening across his face. "That was when I knew I needed to fly."

After starting his career as an F/A-18E/F Super Hornet pilot, Escher went to Empire Test Pilots' School in England, where he flew more than 25 different aircraft alongside British Royal Air Force and other international pilots.

"The knowledge and experience you gain from flying that many different aircraft and aircraft that are outside of your comfort zone, whether that's helicopters or heavies, aerobatic aircraft or fighters from different countries, it makes it a smoother transition," Escher said.

The F-35A and F-35C were designed to be similar. While the flying systems are virtually the same, the jets fly differently due to their respective physical characteristics, Escher noted. The largest obstacle to overcome, however, wasn't the aircraft, but the differences between military branches.

"The way the Air Force does some things and the terminology are different than in the Navy," he said. "There are quite a few differences that are eye-opening, and it makes you want to bridge those gaps."

Those gaps, in part, are why the 33rd Fighter Wing and

VFA-101 have taken this opportunity to share knowledge. As the Navy and U.S. Marine Corps—with its F-35B variant—draw closer to announcing F-35C initial operational capability as the Air Force did earlier this year, the three services will work more hand in hand.

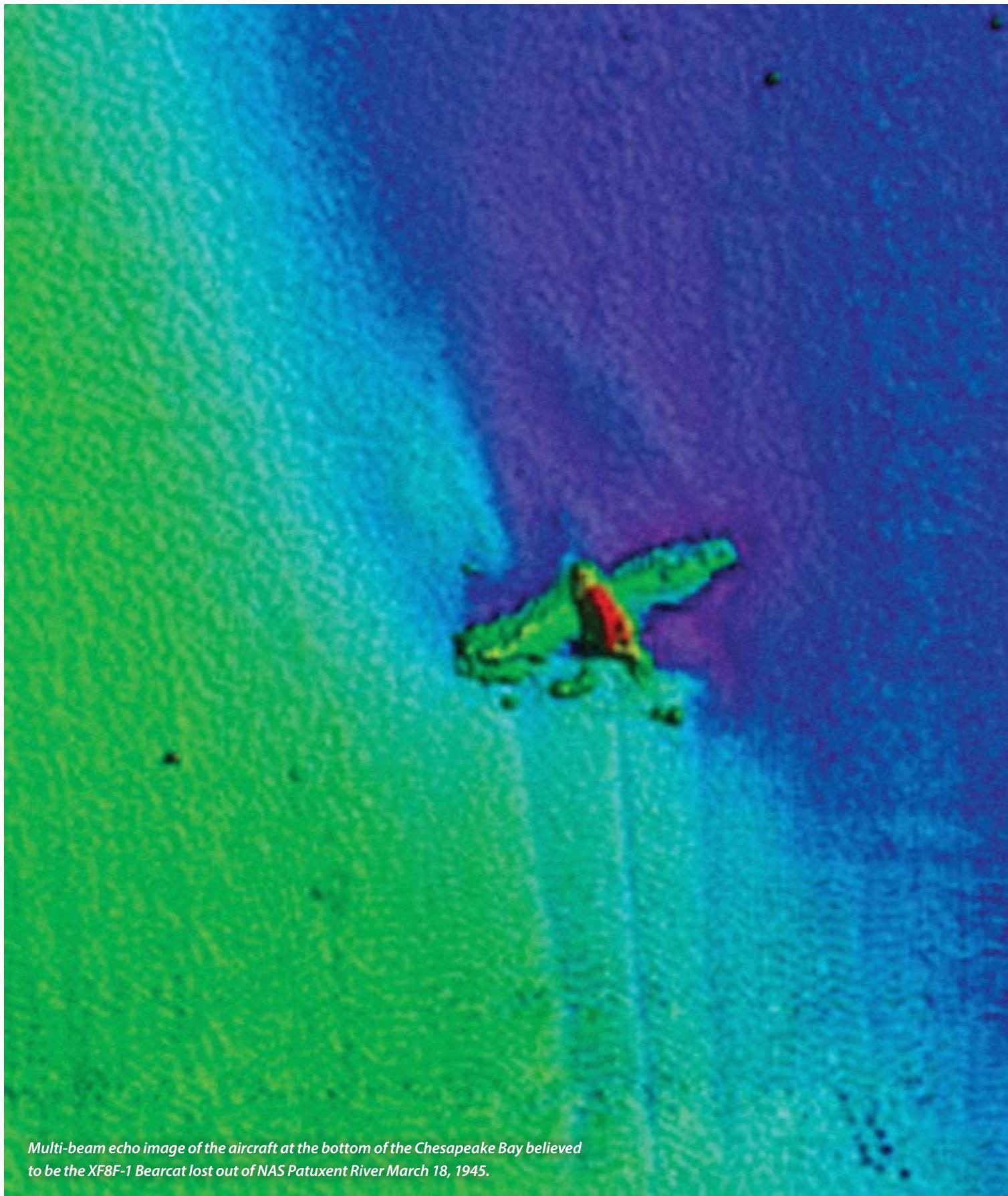
Escher said he can already see the benefits of the relationship and looks forward to continuing and enhancing the flow of information to promote growth across the fleet.

"With the Navy, Marine and Air Force aircraft, we're each flying our own mission in our own separate entities, but we can definitely share lessons learned on tactics," Escher said. "When we put together a large strike package, we will already know what the capabilities and limitations are based on our own experience."

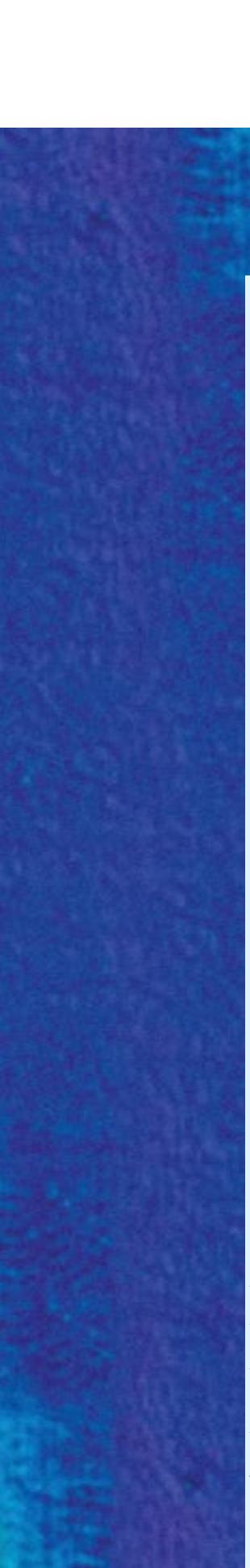
As he looks to join a group of test pilots at Edwards Air Force Base, California, where he will have the opportunity to be the Navy's voice for the aircraft weapons and vehicle system development, Escher plans to use what he learns from his experience with the 33rd Fighter Wing to help the F-35 enterprise grow.

Beyond that, he is glad to have what he calls the greatest job in the Navy and the Air Force as an F-35 pilot.

*Staff Sgt. Peter Thompson is with the U.S. Air Force 33rd Fighter Wing.* 



*Multi-beam echo image of the aircraft at the bottom of the Chesapeake Bay believed to be the XF8F-1 Bearcat lost out of NAS Patuxent River March 18, 1945.*



# LOST BEARCAT: Found or Still Missing?

**Following the Clues to Identify a Submerged  
Wreck at the Bottom of the Chesapeake Bay**

*By Donna Cipolloni*

**On March 18, 1945, at 2:15 p.m., an XF8F-1 Bearcat sped down the runway and climbed into the sky above Naval Air Station (NAS) Patuxent River, Maryland. At that moment, no one could have imagined the propeller-driven fighter plane would disappear into the distance and become the focus of a naval underwater archaeological investigation more than 70 years later.**

**T**he Bearcat's pilot, a 23-year-old with the Aircraft Armament Test Squadron, had logged 935 flight hours and received the Air Medal the previous June while participating in nine carrier-based operations in the Pacific.

With just under seven hours of flight time in the prototype Bearcat, which had only arrived at Pax River's Naval Air Test Center in October 1944, the pilot was undertaking an authorized gunnery test flight to determine gun equipment function and retention of boresight and to test the new mounting brackets installed on one of the guns.

The wind was blowing out of the northeast at five knots; the cloud cover consisted of a high broken overcast at 7,000 feet. Armament Test personnel observed three firing runs on the pilot's flight without incident, after which the airplane passed out of their field of view to the south.

At approximately 3:45 p.m., when the aircraft had not yet returned to Pax



Photo courtesy of Institute of Maritime History

*Underwater photography reveals the leading edge of the port wing on the submerged aircraft.*

Photo courtesy of Carolin McManus

*Side scan sonar image of what is believed to be the submerged XF8F-1 Bearcat, lost out of NAS Patuxent River March 18, 1945.*

U.S. Navy photo

*One of the prototype Bearcats the Navy tested. The F8F was the last propeller-driven Grumman fighter.*

**“When we first found it, we didn’t realize what type of aircraft it was because it was quite small. We were stuck until George came up with the idea of the Bearcat—and it fit.”**

River and was determined to be overdue, the Station Operations Department was notified, and search operations were requested.

The final resting place of that Bearcat—or, more precisely, the attempt to verify its final resting place—was the reason an underwater archaeologist from Naval History and Heritage Command (NHHC) and three volunteer divers working with the Institute of Maritime History (IMH) found themselves on the Chesapeake Bay

June 10, chugging toward the location where a known aircraft, suspected to be the Bearcat, lies submerged and relatively intact in the murky depths.

### **Discovering a Sunken Aircraft**

Several years ago during a routine National Oceanic and Atmospheric Administration (NOAA) hydrographic survey of the Chesapeake, a submerged object was discovered and noted as “an obstruction or

wreck,” with another “anomaly” reported lying approximately 90 feet to the north.

“One of our people, Dan Lynberg, took a good sidescan [sonar] image of it, and it was obviously an airplane, so we started going out to look at it,” said Dave Howe of IMH, a nonprofit organization dedicated to preserving and documenting archaeological remains related to maritime history. The group works closely with the Navy, Marine Corps and the Maryland Historical Trust.



Roper's captain, Dave Howe, with the Institute of Maritime History, records a note in his deck log.

"When we first found it, we didn't realize what type of aircraft it was because it was quite small. We were stuck until George came up with the idea of the Bearcat—and it fit," Howe said.

Howe is referring to Dr. George Schwarz, an archaeologist with the Underwater Archaeology Branch (UAB) of NHHC in Washington, D.C. It is the UAB's responsibility to manage, research, conserve and interpret the Navy's collection of sunken and terrestrial military craft, which includes more than 2,500 shipwrecks and 14,000 aircraft wrecks distributed worldwide.

Over the past three years, after painstakingly researching accident history reports, archival records and numerous other sources, Schwarz and UAB staff have

identified the potential locations of a number of submerged aircraft from the 1940s and 1950s that crashed off the shores of NAS Pax River—and one of those aircraft is likely the missing Bearcat.

"We know the Navy used to recover as much [of a crashed aircraft] as they could, but we've done quite a bit of research on those aircraft we believe the Navy did not recover at the time, and this is one of those," Schwarz noted. "We looked at the NOAA data, and it actually correlated with the area we'd already identified as its possible location."

## Incident Background

The accident history card on the ill-fated test flight reveals the Navy sent three search planes to scour the water and



Diver Polaris Luu and NAS Patuxent River Cultural Resources Manager Mike Smolek look over images of the X8F8-1 Bearcat's cockpit instrument panel before leaving shore to locate the submerged aircraft believed to be the lost prototype Bearcat.

adjacent land that bounded the air firing range the pilot had cleared for his flight.

Around 4:35 p.m., the planes sighted a large heavy slick, approximately 100 by 200 feet, still bubbling fresh oil. A crash boat arrived on the scene at 5:05 p.m. and picked up a seat back cushion, an oxygen bottle, two pieces of flap enclosure strip and a left glove inscribed with the pilot's name.

On the following day, grappling operations recovered a section determined to be the upper left "V" log of the engine mount, which had been separated violently at each end. Though further extensive search operations located nothing else, the recovered parts were identified as belonging to the missing Bearcat.

With no witnesses and nothing

unusual observed about the flight, no cause for the accident could be determined; however, the size of the oil slick and the separation of the engine indicated a violent crash.

"In the case of a high-impact collision into the water, you usually only get parts of the aircraft, maybe a wing or a fuselage; maybe it's just basically a debris field," Schwarz said. "This wreck is unique in that it's fairly intact, so there are a lot of features and dimensions that will help us in identifying it."

Information obtained from previous scans and dives indicates a small, all-metal, low-wing, bubble canopy aircraft with an approximate 33-foot wingspan—consistent with a Bearcat—sitting upright with a missing engine—also consistent with the flight's accident history report.

With yet another follow-up visit to the site, Schwarz continued his quest to verify whether the sunken wreck at the bottom of the Chesapeake is the lost Bearcat and if the anomaly lying to the north of it could be its missing engine.

## Divers Collect Data

As the team approached its target site, Howe maneuvered his boat close to the submerged aircraft and the team dropped a mushroom anchor attached to a buoy off to the side of the site. The first diver in the water, Polaris Luu, was tasked with finding the plane, laying a dive line from the buoy to a point near the aircraft, and noting its location with a marker sent to the surface.

Next overboard were Bill Isbell and Carolin McManus, the only one of the three who had dived the wreck before.

Below, conditions were disorienting as the divers attempted to acclimate themselves in darkness lit only by a single shaft of light from a handheld source. Visibility was no more than 18 inches ahead as silt particulates swirled around them in a sort of brown blizzard.

"The visibility was so poor it took a while to determine the orientation of the plane," Isbell said. "Once we realized we were on the remains of the tail, we were able to navigate to the port side wing on the front."

Luu described the cockpit as open, filled

with mud and covered with marine plant life that completely obstructed their view of the instrument panels and flight controls.

"The cockpit was easily discernible but completely covered in growth," Luu said. "The fuselage is in good shape but also completely covered in growth, which hides all markings."

The divers had been instructed not to move, clean or disturb anything; and as their air depleted, they surfaced to regroup, share their initial observations, discuss their next action plan and prepare for another dive.

"The highest priority is to locate the four gun ports and the air scoops to obtain their measurements with respect to each other and the wing roots," McManus explained, as she geared up one more time.

During their second descent, the team obtained a few of the desired measurements from Schwarz's list.

The divers clearly observed the gun ports on the front of each wing—indicating a military aircraft—and measured them 10 inches apart, although the air scoops were too degraded to provide useful

*Dr. George Schwarz, with the Underwater Archaeology Branch of Naval History and Heritage Command, gives some last minute instructions before the divers go overboard to collect measurements from what Schwarz believes is the XF8F-1 Bearcat.*

U.S. Navy photo by Donna Cipolloni



*Divers Bill Isbell, Polaris Luu and Carolin McManus climb back aboard after their first dive to rest, discuss their observations and prepare a plan of attack before their second dive.*

U.S. Navy photo by Donna Cipolloni

measurements. The cockpit bubble canopy appeared to be collapsed backward, and the cockpit width was measured at 3 feet 1 inch. Wing width was recorded as 7 feet.

Air consumption was the limiting factor in how much the divers could accomplish and, unfortunately, they ran out of time before completing all the measurements and investigating the separate anomaly that may be the Bearcat's severed engine.

Nothing the divers observed that day rules out the possibility that this wreck is anything other than what the team thinks it is, but they are not nearly ready to call it.

"We rarely determine anything on the first, second or even fifth dive," Schwarz said. "I think the presence and spacing of the gun ports is the most telling of a Navy aircraft. Also, the measurements that we do have from previous dives for wing span and length are generally consistent with the dimensions of a Bearcat—though not all diagnostic measurements were obtained to confirm that."

If this wreck is indeed the aircraft in question, it would be protected legally from unauthorized disturbance under the

Sunken Military Craft Act. It could also be the final resting place of a U.S. Sailor.

## Going Forward

Schwarz noted additional visits to the site will be necessary to obtain further measurements to compare with schematics and plans of prototype Bearcats—such as the height of the windshield above the fuselage and wing length from tip to root, among others—and to make additional observations such as whether the craft's wing tips may be missing.

A feature unique to the X8F8-1 was its wing tips, designed to break off when a specified load factor was obtained, thereby saving weight and increasing airplane efficiency. Missing wing tips would further verify the prototype aircraft since, according to the National Naval Aviation Museum website, the system was abandoned and never incorporated in production aircraft "because the wing tips could not be made to break off simultaneously."

Schwarz is already looking for the next opportunity to dive the site, possibly this fall.

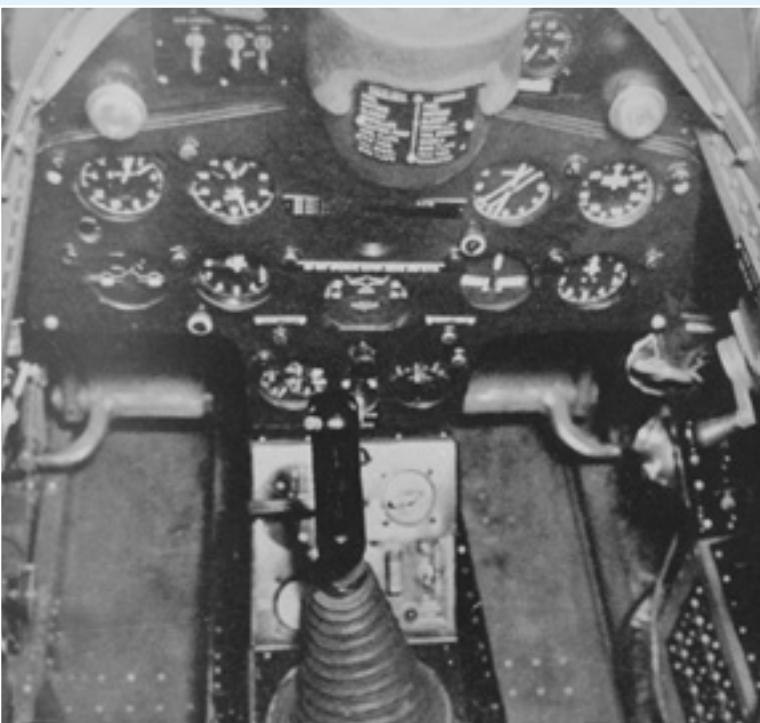
"Hopefully, we'll be able to return and have the opportunity to collect more side-scan sonar and possibly collect our own multi-beam echosounder survey over the wreck," Schwarz added. "But that timing will depend on the availability of our boat and equipment. So, if not this fall, perhaps in spring 2018."

Meanwhile, Schwarz and staff will continue to unravel archival research clues to help them identify the aircraft so the UAB can preserve and manage the site going forward.

"If this proves to be the Bearcat, it's good for us to know where it is so if there are any activities going on in the region, the site can be avoided and protected," he noted.

*Donna Cipolloni is editor of the Naval Air Station Patuxent River's "Tester" newspaper.* 

**NOTE:** The pilot's name has been redacted until Naval History and Heritage Command can complete their investigation of the wreck and determine if the site is a final resting place.



Cockpit of X8F8-1 Bearcat, circa 1944.

U.S. Navy photo



Open cockpit of the submerged aircraft with thick covering of mud and dense marine life obstructing all instrument panels and flight controls.

# FROM FAR BELOW



# TO HIGH ABOVE

## A Helo Pilot's Journey from Submariner to Aviator

*By Donna Cipolloni*

**Navy Lt. Adam Patterson's military career hasn't followed the usual path. He's experienced an evolution of sorts, emerging from the sea as a submariner and later taking to the skies as an aviator.**

In 1996, as he was completing high school, Patterson took the armed services vocational aptitude battery test and scored in the 99th percentile. Military recruiters came knocking.

"The military wasn't something I really wanted to do, but I'd always wanted to fly," said Patterson, who is currently serving shore duty as a helicopter pilot with the Naval Air Station Patuxent River, Maryland, search-and-rescue (SAR) team. "I had started flying at 13 and wanted to pursue it, but it was expensive and time-consuming."

Patterson initially considered becoming an airman, but Navy recruiters pointed out the Navy has more aircraft than the Air Force, so he signed up to become a Sailor.

### Becoming a Nuclear Engineer

"The next thing I knew, they said the only thing I qualified for was the nuke [nuclear] program and told me I was going to be a nuke engineer," he said. "I went to boot camp two months after graduating, and then I was off to nuke school."

Patterson hit the books hard, studying 45 additional hours per week beyond his normal classroom hours.

"We'd start at 0630 and wouldn't get home until 2300," he said. "There were 33 in my starting class, but only three of us graduated, because the program was so difficult."

Patterson then went to a naval nuclear power plant in New York, did well in the program and requested assignment to an aircraft carrier out of San Diego.

"I was going to be a nuke engineer on an aircraft carrier, and I thought it'd be great because I'd finally be near my aviation; but the orders showed up and, unfortunately, they were to a sub out of Norfolk, [Virginia]," he said, chuckling.

Not having volunteered for a submarine, Patterson tried to explain to the Navy this was not what he was supposed to be doing. The Navy countered by suggesting he try it for a year, and if he still didn't like it, they'd assign him to a carrier.

"Within six weeks of being there, I wanted to talk with the [executive officer]. I wanted to be a submariner, and I wanted it in

my record that I was a submarine volunteer," Patterson recalled. "I knew it was what I wanted to be. I started losing interest in aviation and focused on being a submariner."

As a nuclear-trained machinist's mate, Patterson worked on secondary propulsion systems and auxiliary equipment to make the reactor work and provide the sub's fresh drinking water, high-pressure compressed air and all the electrical power. A skilled welder, he could also take a block of metal and create any repair part the sub needed.

"Everything that made the sub work, I owned two-thirds of it," he said. "When I quickly got qualified up to the highest [level] I could possibly qualify in the nuke program as an enlisted man, I got bored."

Submarine life changed further after the 2000 bombing of USS Cole (DDG 67), when subs took on larger roles in mission sets and would spend 90 days or more at sea before returning to port.

### Boredom Spawns Learning

"At the time, there was no Internet, no email, we didn't have phones; so I read books, because there was nothing else to do," Patterson said. "I had all the [qualifications] in the engineering spaces, so I started reading about submarining and submarine warfare tactics, weapons employments, torpedoes [and] cruise missiles. I learned everything until my head hurt."

Patterson learned so much he was able to improve the capabilities and employment methods of U.S. submarines.

His efforts did not go unnoticed. In 2004, Patterson went to Submarine Squadrons 6 and 8 in Norfolk and was responsible for 12 subs. That was also the year he made chief petty officer, after only six years in the Navy.

"People would tell me I'd be [master chief petty officer of the Navy] someday, so that was the plan," he said. "But my captain had a different plan and put me in for the Seaman to Admiral Program so I could get my commission."

Graduating from the University of Arizona in 2008, Patterson planned to remain a submariner and take command of his own

submarine one day, but the aviation department reminded him of his early desire to fly, so he took the test and scored a near-perfect mark.

"I called my former captain and told him I could probably get selected for aviation, and he told me if I wanted to do it, I had earned it and should go for it," he said.

## Up, Up and Away

So it was off to Pensacola, Florida, for flight school, where Patterson did well and ultimately ended up in helicopter training, where he requested to fly CH-53 Sea Stallion helicopters in Norfolk. Instead, he was assigned to fly MH-60R Seahawks in San Diego.

"It's amazing that, whatever you think, for whatever reason, someone else thinks otherwise," Patterson said. "Somebody felt I needed to be a submariner, and I don't know who that was, but I thank them every day because they made my career what it is today. Same thing with the Romeo—the 53s would've been neat to fly, but the avionics package on the Romeo makes it the most capable aircraft in the fleet, in my opinion, and it was a great opportunity to be able to fly that asset."

Patterson has seen his share of action. As a submariner from 1999 to 2005, he served on fast-attack sub USS Albany (CA 123) and spent nearly the entire time underway. In 2004 alone, he spent 242 days under the sea. As an aviator with Helicopter Maritime Strike Squadron (HSM) 73, he did a 10-month deployment, spending most of his time in 5th Fleet. Aboard the destroyer USS Gridley (DDG 101), he made six port calls in 10 months. He even made it to an aircraft carrier, spending three months with a strike group aboard USS Carl Vinson (CVN 70).

"I've been on every continent except Antarctica, and I've sailed every sea, and that's all because of the Navy," Patterson said. "I can't even tell you how many countries I've been to, all because the Navy took me there."

## Landing on Shore Duty

Patterson arrived at Patuxent River in October and now flies the station's search-and-rescue MH-60 Seahawk helicopter.

"It's a stripped-down version made for troop transport for SAR so we can put as many injured personnel in the aircraft as possible," he said. "The group of pilots and aircrew here are top-notch, dedicated professionals. I see it every day. Every day we're focused on saving lives."

Patterson urges young Sailors not to be complacent and always strive for more.

"It's good to be good at your job, but that should just happen," he said. "It's everything else you seek out in professional development that makes you the best Sailor. If you're not trying to better yourself and the people around you, then what are you doing?"

Eligible for retirement in two-and-a-half years, Patterson says if the Navy wants to keep him around longer, he's willing to stay.

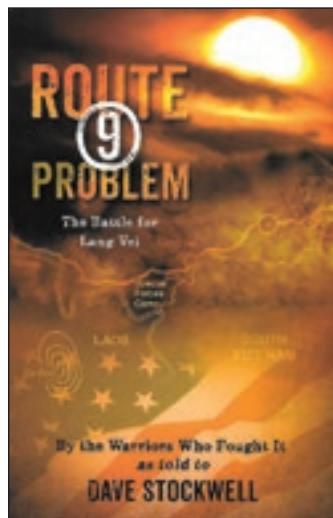
"The Navy has a lot invested in me, and I'm still waiting for a niche to be carved out in the aviation community," he said. "I'm just now understanding aviation the way I understood submarines. I've gotten to the point where I can see places or processes that need improvement or a change here or there. We'll see if I get the additional time to do that, but, if not, I think I'll be OK finding a job."

*Donna Cipolloni writes and edits Naval Air Station Patuxent River's "Tester" newspaper and is a regular contributor Naval Aviation News.* 



# Professional Reading

By Cmdr. Peter Mersky, USNR (Ret.)



## Route 9 Problem: The Battle for Lang Vei

By the Warriors Who  
Fought It as told to  
Dave Stockwell

Book Publishers Network,  
2016. 361 pp. Ill. \$21.95

The Vietnam War was, in part, a series of hard-fought aerial campaigns by aircrews flying sorties out of the hot, humid airfields of Southeast Asia and the equally hot, humid flight decks of 7th Fleet carriers in the South China Sea. Often these sorties were flown in support of bloody battles on the ground that resulted in little more than a terrible waste of human life on both sides. The headlines in western newspapers that told of these engagements in the steaming jungles of the Vietnam peninsula and the surrounding countries of Laos and Cambodia only added to the confusion and heartache of the American people back home. Dave Stockwell's recounting of the two dozen U.S. Army Green Berets and their 400 tribesmen at Lang Vei gave the North Vietnamese Army (NVA) such a monumental headache that they became known as the "Route 9 problem" all the way to the highest levels of the North Vietnamese government.

One of the bloodiest of those ground battles, the siege of Khe Sanh in the northwestern highlands of South Vietnam, began in February 1968 and lasted 77 days. The battle involved several engagements outside the U.S. Marine garrison at Khe Sanh. The NVA and their Viet Cong minions struck at night and at times seemed poised to overwhelm the American defenders, while outside the camp's barbed wire as several other battles developed. During one of the first of those engagements in the early hours of Feb. 8, 1968, Vietnamese forces advanced along Route 9 to Lang Vei west of Khe Sanh with amphibious PT-76 tanks capable of fording streams and small rivers to bring their 76 mm cannon to bear on American troops.

In his book, Stockwell draws on the accounts of the men who fought at Khe Sanh and Lang Vei to depict the

engagements during a very intense stage of the war, namely the 1968 Tet New Year. It was arguably one of the war's most hard-fought periods. Ground battles raged along the length and breadth of South Vietnam as the communist insurgents struggled to gain a secure foothold and oust the American presence.

The action around Lang Vei and Khe Sanh rapidly increased as the NVA sent in a force of PT-76s to advance on American positions at night. The tanks' fire, augmented by ground troops who followed behind the communist armor, resulted in the first major casualties in the ranks of the American forces and their South Vietnamese allies. Though they managed to destroy a few tanks, the outlook quickly turned grim and the Green Berets began calling for close air support.

As he builds his narrative, Stockwell brings in the timely arrival of Navy A-1 Skyraiders from VA-25 (Fist of the Fleet) flying from USS Coral Sea (CVA 43). An American single-seat attack aircraft known affectionately as the "Spad" after the iconic French World War I fighter, the A-1 had been in the war since the beginning. But its low speed compared to the more modern jets it shared the carrier flight deck with meant the 20-year-old aircraft was at a distinct disadvantage when flying into the deadly thickets of enemy flak and surface-to-air missiles.

Later in the war, the A-1 had been relegated to targets south of the demilitarized zone (DMZ) that separated the two Vietnams. But the Spad's pilots were always ready and able to respond when needed. Though the A-1 was approaching obsolescence, it still retained a degree of maneuverability and toughness that its jet cohorts lacked. Both advantages would be sorely needed over Lang Vei.

As it happened, a section of two planes of the Fist of the Fleet Spads was right where it was needed to be when the forward air controller over the Green Beret camp at Lang Vei called for help from anyone in the area. Lt. Cmdr. Rosario "Zip" Rausa quickly acknowledged and took his section below the clouds to make multiple passes with bombs and 20 mm cannon fire over the advancing communist troops. He and his wingman, Lt. j.g. Lawrence E. Gardiner, known as "Leg" because of his initials, delivered the Army troops some much-needed respite from the fighting.

Strangely, as Stockwell reports, while Rausa's efforts were praised by his compatriots and the Green Berets, senior leaders were unhappy he had busted minimums and descended below the clouds that hung low over the battlefield. Even today, some 50 years later, efforts to augment the courageous pilots' Air Medal with a higher award have been denied. It is hard to understand this lack of recognition, given

Rausa and his fellow pilot risked their lives acting in defense of fellow Americans in danger of being overrun by enemy forces.

Stockwell also highlights the important role Marine helicopters played toward the end of the action at Lang Vei when VMO 6 and HMM 262 helicopter crews flew UH-1s and CH-46s, respectively, into the battered base to airlift survivors out of harm's way.

Stockwell tells a compelling story and has loaded this

heavily-researched book with details of NVA tactics and equipment, as well equally detailed descriptions of the battle's U.S. participants. Many of the particulars will no doubt inform readers interested in the Vietnam War as well as many Vietnam veterans. Additionally, the "Route 9 Problem" won first place in the Military History category of the 2017 International Book Awards, an annual competition judging thousands of books in 80 categories from a wide array of publishers throughout the world. 

### *Grumman S2F/S-2 Tracker, Part One, Development, Testing, Variants and Foreign Users*

Robert J. Kowalski and  
Tommy H. Thomason,  
2016. 201 pp. Ill. \$46.95

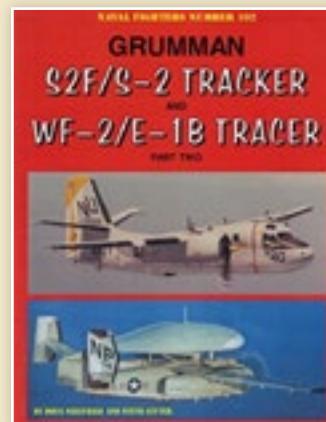
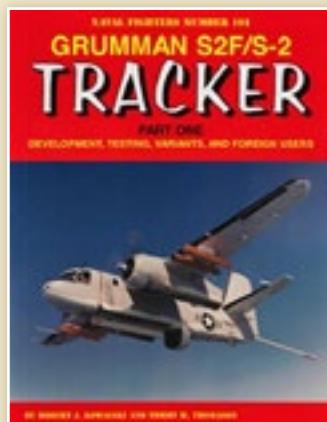
These are the first two titles of a planned trilogy describing the Grumman family of long-serving Anti-Submarine Warfare (ASW), Airborne Early Warning (AEW) and Carrier Onboard Delivery (COD) aircraft. With the third book due out soon, we felt it was time to review these two books, Nos. 101 and 102 in the Ginter Naval Fighters series.

Keeping with the long-established format of heavily illustrated pages supported by text and captions, as well as diagrams from the "Naval Air Training and Operating Procedures Standardization" manual, these two volumes show off Grumman's carrier aircraft that played such a major role in carrier air wings through the 1950s into the late 1980s—quite a record. There are probably few people who served in Naval Aviation during those decades who didn't fly in one of these aircraft—if only as passengers in the C-1 COD to get on and off a carrier underway.

I have to admit my only hop in one of these aircraft was in an S-2 Tracker returning to North Island Naval Air Station from Naval Air Station Fallon in February 1973. It was an interesting flight as I sat on the step between the two pilots.

When I took a job at "Approach" magazine in March 1984, the chief of staff was Capt. Jack Smith, who had racked up thousands of hours in S-2s. He was always a fierce defender of his beloved "Stoof," as it was nicknamed (for S-two-F), whenever someone dared compare it unfavorably to the more glamorous jets to be found in a carrier air wing of the day.

There are literally hundreds of color and black-and-white photos in these books, and I am sure many veterans will find their squadrons represented on these pages. The aircraft's design and development over the years are also well depicted, from the dark blue color



### *Grumman S2F/S-2 Tracker and WF-2/E-1B Tracer, Part Two*

Doug Siegfried and  
Steve Ginter,  
2016. 249 pp. Ill. \$52.95

scheme of the 1950s to the dull gray colors of its later career.

Grumman's team of aircraft tallied numerous deployments to Vietnam, though little has been written about them, and only one S-2 has ever been deemed lost to enemy action. Nonetheless, there were submarine patrols, logistic flights, and flights for supply and personnel to be flown. The Stoof, the E-1 Tracer (the "Fudd") and the COD always came through, garnering little fanfare but setting a steady, reliable record of which all veterans of those squadrons could be proud.

Part two's authorship is shared, in part, with Cmdr. Doug Siegfried, who is well known to members of the Tailhook Association for his work as an associate editor for "The Hook." Doug flew S-2s in the early years of Vietnam. After all, who best to write about an aircraft than someone who flew it on several cruises into a combat theater? 

# Squadron Spotlight

## Helicopter Sea Combat Squadron (HSC) 25

**"Island Knights"**

**Established:** Feb. 3, 1984

**Based:** Andersen Air Force Base, Yigo, Guam

**Current Commanding Officer:**

Cmdr. E.M. Weiler

**Mission(s):** As the Navy's only forward-deployed Helicopter Sea Combat Squadron, provide armed helicopter capability for 7th and 5th Fleets, as well as logistics, search-and-rescue, humanitarian assistance and defense of the Amphibious Task Force for 7th Fleet

**Brief History:** Initially established as Helicopter Combat Support Squadron (HC) 5 at Naval Air Station (NAS) Agana, Guam in February 1984, the "Providers" flew the CH-46D Sea Knight, and in 1992, provided a permanent search-and-rescue detachment aboard USS Belleau Wood (LHA 3).

The squadron moved to Andersen Air Force Base in 1996 after NAS Agana was closed, and that spring deployed its first night-vision-capable search-and-rescue detachment to LHA 3. The detachment was permanently moved to USS Essex (LHD 2) in the fall of 2000.

Redesignated the HSC-25 Island Knights on April 21, 2005, the squadron assumed a new mission: providing essential air ambulance services for coalition land forces at Camp Buehring, Kuwait.

Since February 1984, HSC-25 has moved millions of tons of supplies and ammunition, as well as thousands of personnel, providing much of the logistics power to the 7th and 5th Fleets. The Island Knights have participated in Operations



Southern Watch, United Shield, Vigilant Sentinel, Unified Assistance, Enduring Freedom and Iraqi Freedom, as well as Tri-Crab, Cobra Gold and Tandem Thrust multinational exercises.

The only Navy squadron based at Andersen AFB, HSC-25 provides 24-hour search-and-rescue and medevac services, over land and water, for Guam and the Northern Mariana Islands.

Averaging more than 30 rescues and 70 medevacs per year, HSC-25 also conducts airborne firefighting, vertical onboard delivery, drone and torpedo recovery, special operations airborne support, and fleet logistics support for all military activities in the Guam area, including the maritime prepositioned ships operating in the local area.

**Aircraft Flown:** MH-60S Seahawk

**Number of People in Unit:** 388

## Significant Accomplishments:

- The Navy's only squadron to maintain a 24-hour search-and-rescue and medical evacuation alert posture, directly supporting the U.S. Coast Guard, Sector Guam and Joint Region Marianas
- Since 1984, has launched 2,451 missions, resulting in 773 medical evacuations and rescuing 476 lives from the waters and jungles of the island chain
- Flown more than 39 firefighting missions for the Island of Guam
- Recipient of the 2015 HSC Battle "E" award





# NAVAL AVIATION NEWS

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