

NAVAL AVIATION NEWS

THE FLAGSHIP PUBLICATION OF NAVAL AVIATION SINCE 1917

FALL 2022

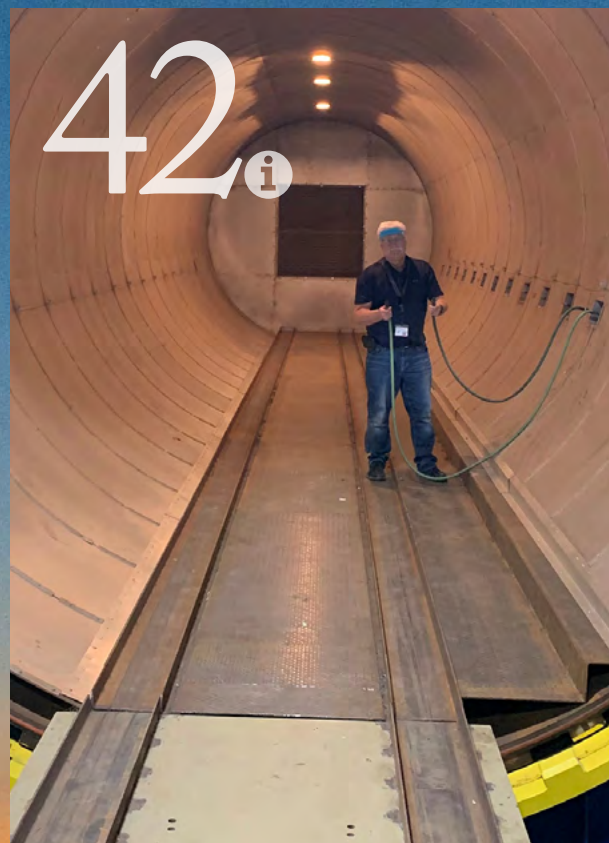
FIRST-IN-CLASS AIRCRAFT CARRIER

USS FORD EXECUTES FIRST DEPLOYMENT



WHAT'S INSIDE

- ▶ E-2C: Marking 50 Years Since 1st Flight
- ▶ Ship Motion Platform Tests UAVs On Land
- ▶ F/A-18 Resurrected After 10 Years Grounded



An F/A-18F Super Hornet, attached to the "Diamondbacks" of Strike Fighter Squadron (VFA) 102, descends for a landing on the flight deck of the U.S. Navy's only forward-deployed aircraft carrier, USS Ronald Reagan (CVN 76), in the Sea of Japan.

U.S. Navy photo by MC2 Michael B. Jarmiolowski

NAVAL AVIATION NEWS

FALL 2022

VOLUME 104, No. 4

DEPARTMENTS

- 4 Flightline
- 7 Grampaw Pettibone
- 8 Airscoop

FEATURES

- 24 **Ford Executes First Deployment**
- 32 **50 Years Since First Flight, E-2C Legacy Continues**
- 38 **NAMCE Lemoore Responsible for Returning Nearly Five Squadrons' Worth of Aircraft to Fleet Since 2018**
- 40 **Ship Motion Platform Brings Unique Testing Tool to NAWCAD Lakehurst**
- 42 **Team Investment Saves CH-53K Program Schedule, Strengthens Small Business**
- 46 **The Phoenix Rises: Resurrection of Aircraft 166879**
- 50 **50th CH-53E Super Stallion Completes RESET**
- 52 **FRCE's H-53 Military Branch Keeps the Fleet Ready to Fight**
- 54 **FRCE Artisans Earn Kudos for Repairing Damaged Vintage Aircraft**
- 56 Professional Reading

ALSO IN THIS ISSUE

ON THE COVER



On the cover: The first-in-class aircraft carrier Gerald R. Ford (CVN 78) steams in formation with Spanish Armada frigate *Alvaro de Bazan* (F 101), German frigate *FGS Hessen* (F 221) and Ticonderoga-class cruiser *USS Normandy* (CG 60) in the Atlantic Ocean, Oct. 20. The Gerald R. Ford Carrier Strike Group recently returned from deployment in the Atlantic Ocean, and conducted training and operations alongside NATO Allies and partners to enhance integration for future operations and demonstrate the U.S. Navy's commitment to a peaceful, stable and conflict-free Atlantic region. (U.S. Navy photo by MCS2 Jackson Adkins).

After years of anticipation, the first-in-class aircraft carrier *USS Gerald R. Ford* recently returned from her first deployment. Read about the Ford and her crews' accomplishments leading up to and during deployment on Page 24. One of the Navy's stalwarts of the air, the E-2C Hawkeye celebrates 50 years of flight on Page 32. In another celebratory moment, on Page 46, read about how dedicated members of Strike Fighter Squadron (VFA) 103 took an F/A-18 from being grounded and cannibalized over a decade to becoming a fully mission-capable aircraft. In the same vein, read about the herculean efforts taken by the Naval

Aviation Maintenance Center for Excellence (NAMCE) in Lemoore, California, in returning five squadrons worth of mission-capable F/A-18 Hornets to the fleet on Page 38. And in an example of cooperation and ingenuity, the Naval Air System Commands Heavy Lift Helicopter Program Office and a small Arkansas-based company collaborated to create a solid fuel cell supply chain for the Navy's CH-53K King Stallion on Page 42.

On the back cover: Lt. Cassie Gettinger, assigned to the "Sea Knights" of Helicopter Sea Combat Squadron (HSC) 22 prepares to co-pilot an MH-60S Sea Hawk at Naval Station Norfolk, Virginia, Oct. 29, 2019. (U.S. Navy photo).

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

Director, Air Warfare

Rear Adm. Andrew Loiselle, USN

Editor in Chief

David Byrd, Naval Air Systems Command

Editorial Board

Rita Boland, Naval Aviation Enterprise

FORCM Christopher Chelberg, USN, Naval Air Force Atlantic

Stan Coerr, Headquarters, Marine Corps

Cmdr. Zachary Harrell, USN, Naval Air Forces

Marcia Hart, Naval Air Systems Command

Richard Holcomb, Air Warfare N98

Naval Aviation News Staff

Fred Flerlage, Art Director, Naval Air Systems Command

Rob Perry, Staff Writer/Editor, Naval Air Systems Command

Contributing Editors

Melissa A. Johnson, Naval Air Systems Command

Columnists

Cmdr. Peter Mersky, USNR (Ret.), Book Review Editor

Cmdr. Bryan Dickerson, USN (Ret.), Contributing Editor

Subscriptions

Due to issues beyond our control, Naval Aviation News is ceasing the publication of our print product and focusing on the development of a full digital experience for readers. Please visit our website <https://www.navalaviationnews.navy.mil> to track our digital migration process and download archive copies of the publication.

Current subscribers will be contacted by the U.S. Government Printing Office with details regarding refunds for the remainder of their 2022 subscription. Questions regarding refunds should be directed to contactcenter@gpo.gov. Official subscriptions to military and government agencies will also discontinue.

Submission Guidelines

Commands may send news and announcements such as awards, rescues, milestones and other achievements to navy_nannews@navy.mil. Photos of Naval Aviation-oriented activities are always welcome. For longer feature articles, contact the editor in advance. Military contributors should forward articles about their commands only after internal security review and with command approval. For more information, contact us at navy_nannews@navy.mil.

Naval Aviation News (USPS 323-310; ISSN 0028-1417) is published quarterly for the Chief of Naval Operations by the Naval Air Systems Command. The Secretary of the Navy has determined that this publication is necessary in the transaction of business required by law. The use of a name of any specific manufacturer, commercial product, commodity or service in this publication does not imply endorsement by the Navy. Any opinions herein are those of the authors, and do not necessarily represent the views of Naval Aviation News, the Department of the Navy or the Department of Defense.

Approved for public release: SPR No. 2022-806

NAVAIR Public Release Distribution Statement A – “Approved for public release; distribution is unlimited”

SEND YOUR FEEDBACK TO: navy_nannews@us.navy.mil

Flightline

AIRLANT's MOC Director Discusses Transforming Naval Aviation from the Deckplates to the Flight Lines

By Jennifer Cragg, NAE Communications

Capt. Ronnie Harper has spent the entirety of his 35-year naval career improving Naval Aviation through positions held as an enlisted and naval officer assigned in organizational (O-Level) and intermediate (I-Level) maintenance and acquisition assignments. This experience ultimately led to his current role as the Maintenance Operations Center (MOC) Director at Commander, Naval Air Force Atlantic (AIRLANT).

“When I was participating in the MOC process from the flight line perspective, I didn’t get the magnitude of influence that the MOC has as an organization on Naval Aviation readiness,” Harper said. “I have a lifetime of experience from three different, unique perspectives on why things happen on a flight line.”

As the military MOC Director, Harper has an opportunity to apply his years of experience to influence and improve the mission capable (MC) rates of Marine Corps, Navy and Navy Reserve aircraft.

“Once you have been on this side of the fence, you see this machine work,” he said.

Currently, the MOC oversees the majority of the type/model/series (TMS) in the Navy and one Marine Corps TMS. It plans to expand to include the remaining Navy, Marine Corps and Navy Reserve aircraft assets.

“All we do in the MOC from start to finish is to work readiness problems for every TMS that we have. We are focused on removing the barriers to readiness that may include increasing manpower to squadrons to performing maintenance, increasing training for Sailors and Marines, or removing obstacles in supply,” Harper said.

Removing barriers to readiness fits nicely into Chief of Naval Operations Adm. Michael Gilday’s “Get Real, Get Better” plan and serves as another example of how the entire Naval Aviation Enterprise (NAE) is consistently improving itself.

“Any successful, well-oiled machine or person has to self-assess themselves as a person, command or unit,” Harper said. “If you can’t self-assess yourself about what you need to do to get better, you are never going to get better.”

That drive to consistently challenge oneself for improvement has guided



Capt. Ronnie Harper, Maintenance Operations Center (MOC) Aircraft on Ground (AOG) director, talks on the phone while in his office, July 26. The MOC AOG works to assess, improve and properly organize the efforts that keep mission-capable aircraft fully ready to fly wherever the Navy needs them.

Harper throughout his entire naval career. He first enlisted in the Navy in December 1986 serving as an Airman Apprentice. During his enlisted career, Harper's leadership potential was recognized early on when he received Squadron Sailor of the Year and Wing Sailor of the Year awards while serving in the rank of petty officer second class. Harper would later receive his commission as a naval officer in May 2000 and was recently informed of his selection to the rank of captain. His Naval

ment, tools or manpower to get it done. It's my job as the MOC Director to remove those barriers."

Since the stand-up of the MOC in 2018, it has served as the nerve center for the Naval Sustainment System-Aviation (NSS-A), which is composed of seven different pillars all focused on improving Naval Aviation and driving that focus on increased MC rates and Mission Capable Aircraft Required (MCAR) numbers for the fight-tonight requirement. The pillars in addi-

"There is nothing more frustrating for an E-5 wrench turner to know what needs to get done on a jet but not have the support equipment, tools or manpower to get it done. It's my job as the MOC Director to remove those barriers."

Aviation experience has always focused on flight line improvement.

"I'm trying to give the Sailors and Marines the tools they need to make mission capable and fully mission capable jets which in turn, when ready, will be available for any mission tasking by Naval Aviation leadership," Harper said. "There is nothing more frustrating for an E-5 wrench turner to know what needs to get done on a jet but not have the support equip-

tion to the MOC, consist of: Cost; Governance, Accountability, and Organization; Fleet Readiness Centers Reform; Supply Chain Reform; O-Level Reform; and Engineering and Maintenance Reform.

"We are always striving to be better," Harper said. "Gone are the days of readiness at any cost; we are working to make readiness at the right cost. The MOC is the coordinating pillar of NSS-A. We are able to focus the other pillars on any readi-

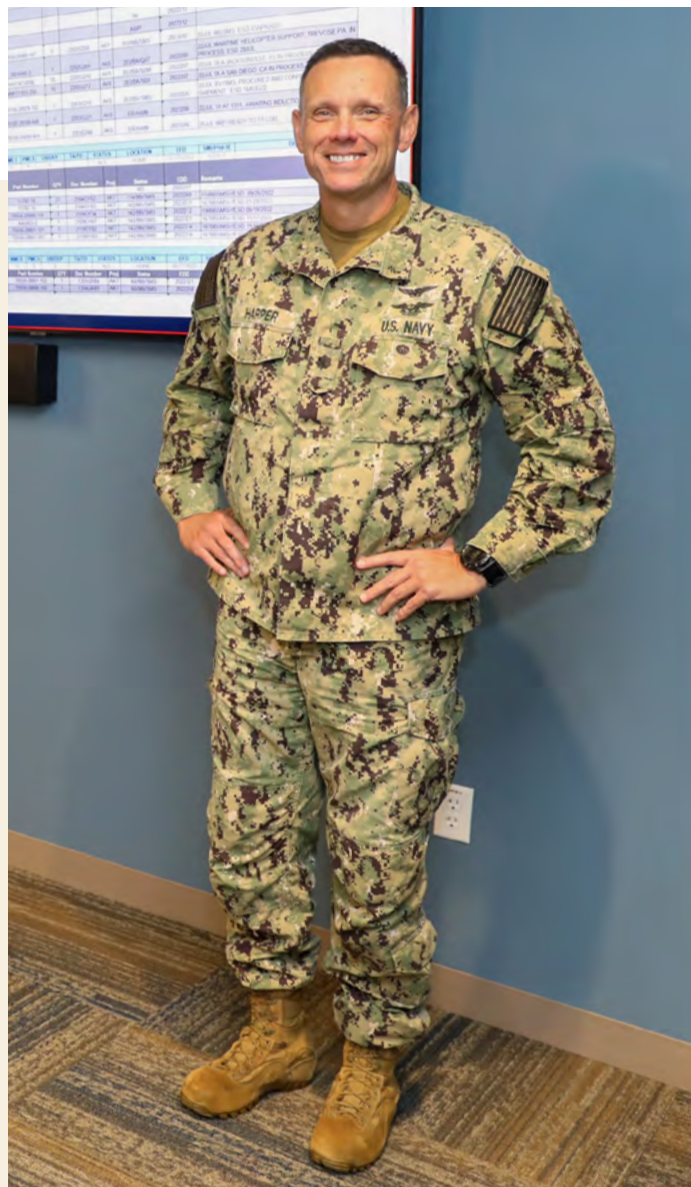
ness barriers that are keeping us from meeting our goals and we have the ability to reach into those other pillars and help to remove those barriers. The entire NSS-A process is very impressive to watch, and it absolutely works.”

Harper’s previous assignments prior to serving as the MOC Director include an assignment with the U.S. Navy Blue Angels as a crew chief; four overseas tours in the Seventh Fleet Area of Responsibility; and four tours at Naval Air Station (NAS) Lemoore, California, to include serving as commanding officer and executive officer of the Center for Naval Aviation Technical Training Unit. Other assignments include his time with the

Capt. Ronnie Harper was born in Hardinsburg, Kentucky, and joined the United States Navy in December, 1986. After Avionics “A” school, he reported to USS Saratoga (CV 60). In May, 1991, he reported to Fighter Squadron (VF) 45 at Naval Air Station Key West, Florida. Harper then reported to the Navy’s Flight Demonstration Team (Blue Angels) in October 1993. While assigned to the team, he served as the No. 3 and No. 7 Crew Chief. After the completion of his tour in Pensacola, Harper reported to Strike Fighter Squadron (VFA) 195 at NAS Atsugi, Japan. While in VFA-195, he earned his commission as an Ensign through the Limited Duty Officer Program.

In August, 2000, Harper reported to VFA-22 at NAS Lemoore, California. His assignments included Aircraft Division Officer, Material Control Officer and Maintenance/Material Control Officer. In April 2004, he reported to Commander, Strike Fighter Wing Pacific (CSFWP), where he served as the Wing Readiness Officer. Harper’s next assignment was forward deployed onboard USS Kitty Hawk (CV 63), where he served as the Avionics Division Officer in the Aircraft Intermediate Maintenance Department. His next assignment began in October, 2008, when he reported to NAVAIRSYSCOM onboard NAS Patuxent River, Maryland, where he served as the Consolidated Automated Support System (CASS) Deputy Integrated Product Team (DIPT) Lead within AIR-1.0/Common Aviation Support Equipment Program Office. Upon completion of Harper’s tour at NAVAIR, he was once again forward deployed onboard USS George Washington (CVN 73), where he served as the Assistant Maintenance Officer and the Maintenance/Material Control Officer. After a successful tour onboard Washington, Harper was privileged to be chosen as the Carrier Air Wing 5 Maintenance Officer. Harper then served as the Maintenance Officer of VFA-101 at Eglin Air Force Base, Florida. VFA-101 served as the Fleet Replacement Squadron for the F-35 Lightning II. In May 2017, Harper reported onboard the Center for Naval Aviation Technical Training Unit, Lemoore, California, as Executive Officer and assumed Command of the Unit in September 2018. Upon completion of his Commanding Officer tour, Harper reported to Commander, Strike Fighter Wing Pacific, Lemoore, in June 2020, where he served as the Maintenance Officer. In May 2021,

Navy’s Common Aviation Support Equipment Program Office where he learned the acquisition process from the first phase to fleet-wide distribution. He also served on numerous carrier deployments including USS Saratoga (CV 60), USS Independence (CV 62), USS Kitty Hawk (CV 63), USS Carl Vinson (CVN 70) and USS George Washington (CVN 73). 🇺🇸



Harper was selected to become the CNAL Maintenance Operations Center (MOC) Director and reported in November 2021.

Harper’s personal accomplishments include a Bachelor of Science from Embry Riddle Aeronautical University and an M.B.A. from Touro International University. His decorations include three Meritorious Service Medals, eight Navy Commendation Medals, five Navy Achievement Medals and various unit and service awards. 🇺🇸

Grampaw Pettibone

Gramps from Yesteryear:
March-April 2002

Illustration by *Ted Wilbur*

Hit by a Hornet

During night operations, in an effort to take a break and rest while waiting for the arrival of an F/A- 18C to land and proceed to his “hot brake” check area prior to the refueling pits, a plane captain/hot brake checker laid down on the centerline of the taxiway and fell asleep. As the Hornet taxied to the hot brake check area the pilot’s attention was diverted from the taxiway because he was unable to see the illuminated taxi wands where the hot brake checker usually stands. His attention was on the hangar, the refueling pits and the sides of the taxiway looking for the hot brake checker.

As the aircraft drew nearer the hot refueling pits, the pilot eyed another aircraft which was refueling. He expected the hot brake checker would emerge from there. The pilot never saw the checker lying in the taxiway, even with his taxi light on.

The checker did not awaken until after the Hornet’s nose wheel hit him. He was

subsequently pushed along by the wheel and although the wheel never actually rolled over him, the checker suffered severe trauma to his left knee causing

permanent partial disability. He managed to pull himself free from the nose wheel but not until it had dragged him 31 feet. 🛩️



Grampaw Pettibone says...



Holy rollers! Had the hot brake check area been better illuminated, this youngster might have retained a normal left knee. He was exhausted all right, but he was fatigued because of illegal drug use and improper sleep.

Uncertain of the brake checker’s position, the pilot would have been better off halting the Hornet and ensuring the way ahead was clear. But Ole Gramps has to admit, he can’t remember the last time anybody fell asleep on the taxiway centerline, or even on the taxiway for that matter. 🛩️

Compiled by Rob Perry

First Woman Takes Command of Naval Test Wing Atlantic



U.S. Navy photo by Paul Lagasse

Capt. Elizabeth Somerville shakes hands with Col. Richard Marigliano after taking command of Naval Test Wing Atlantic during a ceremony at Naval Air Station Patuxent River, Maryland, Aug. 11. Somerville is the developmental test wing's first woman commodore. During the ceremony, Marigliano retired from the U.S. Marine Corps after 27 years of service.

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, PATUXENT RIVER, Md.—Capt. Elizabeth Somerville became the Navy's first woman to command Naval Test Wing Atlantic after a change of command ceremony at Naval Air Station Patuxent River, Maryland, Aug. 11.

Somerville relieved Commodore Col. Richard Marigliano, who oversaw the developmental air wing—the Navy's largest—that conducts testing for every aircraft in the Navy and Marine Corps.

"Over the past few years, this wing delivered our Navy and Marine Corps capabilities including Next Generation Jammer, the CH-53K heavy lift helicopter, and the Joint Air-to-Ground munition to name a few," said NAWCAD Commander Rear Adm. John Lemmon who presided over the ceremony. "Its

leadership and our people make this team world class."

Somerville takes command alongside the wing's first woman civilian director, Deb Salamon.

"This test wing is charged with an important mission: deliver lethality to our Sailors and Marines," said Somerville. "It's a huge challenge but this team is up for it—flight test is the ultimate team sport."

Somerville is an EA-6B Prowler and EA-18G Growler naval flight officer with more than two decades of experience in operational and developmental aviation. The Massachusetts native deployed to support Operations Iraqi Freedom and Enduring Freedom in the Global War on Terrorism, and flew with Electronic Attack Squadron (VAQ) 141 where she led the Growler's maiden deployment aboard USS George H. W. Bush (CVN 77). She

also served as commanding officer for two developmental test squadrons dedicated to weapons and tactical aircraft—Air Test and Evaluation Squadrons (VX) 31 and 23—and held various acquisition roles at Naval Air Systems Command. She is a U.S. Naval Test Pilot School graduate and earned bachelor's and master's degrees in aeronautical engineering from the Massachusetts Institute of Technology and the Air Force Institute of Technology.

"This tour was the most challenging and rewarding over my 27 years as a Marine," Marigliano said. "This test wing has big jobs ahead of us advancing Naval Aviation—[Capt. Somerville] is the right leader to move it forward."

During the ceremony, Marigliano retired from the U.S. Marine Corps after nearly 30 years of service. The CH-53 Stallion pilot led the air wing through its largest reorganization in more than 30 years, and through the COVID-19 pandemic. The New York native previously served as the military assistant for the Assistant Secretary of the Navy for Research, Development and Acquisitions, and various other acquisition roles at Naval Air Systems Command. He also served as commanding officer of NTWL's rotary test squadron, HX-21. He worked in multiple positions on the CH-53 developmental test team, including the government flight test director of the new CH-53K program. He is a U.S. Naval Test Pilot School graduate, earned a bachelor's degree in aeronautics and applied mathematics from Dowling College, and a master's degree in aircraft systems from the University of Tennessee.

Naval Test Wing Atlantic, a component of the Naval Air Warfare Center Aircraft Division (NAWCAD), supports the test and evaluation of the Navy's principal aviation systems, ranging from unmanned to rotary- and fixed-wing aircraft.

From Naval Air Warfare Center Aircraft Division. ✈

King Stallion Completes First Exercise

MOUNTAIN HOME, Idaho—Arid, hot air sits heavy over the mountains. Soon, the autumn winds will sweep the lands to chase away the heat, but before they can, the chop of helicopter rotor blades can be heard through the valleys. Marine Heavy Helicopter Squadron (HMH) 461 has been here before, but never with the latest innovation in Marine Corps aviation: the CH-53K King Stallion.

This is the first fleet exercise the Marine Corps' King Stallion deployed to conduct, marking a step forward for the Marine Corps.

"The CH-53K is more powerful, safer and an easier-to-maintain helicopter. That'll allow each wing commander more capacity to sustain the Marine Air-Ground Task Force in an austere environment," said Lt. Col. Adam Horne, HMH-461 commanding officer.

With three times the lift capability of its predecessor, the CH-53K is the new heavy-lift solution for the naval force.

"The benefits are endless," said Staff Sgt. James Ganieany, airframes division chief for HMH-461. "We practice our external [lifts] with a Light Armored Vehicle (LAV), and we never have power issues. HMH-461 had its first operational flight for the CH-53K in April 2022, and have been training with it ever since."

"Routinely training with an LAV for an external load, to me, is absolute mind boggling," said Staff Sgt. Dakota Schneider, a crew chief instructor with Marine Aviation Weapons and Tactics Squadron 1. "It's got power for days; you can do anything you want."

Mountain Home, Idaho, was chosen as the first deployment for training for the King Stallion because it provided a new climate and terrain features distinct from North Carolina, HMH-461's home state.

"We have a lot of environmental flying that we don't get to do in New River, [North Carolina]" said Ganieany. "Canyons, mountains, desert; it's a complete 180 of what we're used to flying in."

The CH-53K can fly at higher altitudes, for longer distances and in hotter conditions than the CH-53E. HMH-461 used these qualities at Mountain Home to assist in future CH-53K production and employment.

The Marine Corps continues its long legacy of innovation with this test of the CH-53K King Stallion. The lessons learned by HMH-461 during the deployment for training support the Marine Corps' modernization efforts.

Written by Cpl. Lauren Salmon with the 2nd Marine Aircraft Wing. 🦅



U.S. Marine Corps photo by Cpl. Adam Henke

Marines with Marine Heavy Helicopter Squadron (HMH) 461 carry a cargo container with a CH-53K King Stallion at Mountain Home Air Force Base, Idaho, Aug. 11.

Vice Adm. Kenneth Whitesell, Commander, U.S. Naval Air Forces, addresses Sailors assigned to the “Titans” of Fleet Multi-Mission Squadron (VRM) 30, during an award ceremony held aboard Naval Air Station North Island, California, Oct. 20.



HSC-3, HSC-4, VRM-30 Receive Navy’s Highest Flight Safety Award

SAN DIEGO, Calif.—Vice Adm. Kenneth Whitesell, Commander, Naval Air Forces, presented the 2021 Chief of Naval Operations (CNO) Aviation Safety Award to the “Merlins” of Helicopter Sea Combat Squadron (HSC) 3, the “Black

Knights” of HSC-4 and the “Titans” of Fleet Logistics Multi-Mission Squadron (VRM) 30 aboard Naval Air Station North Island, California, Oct. 20.

Also known as the Safety “S,” the Navy’s highest flight safety award is

bestowed upon Navy and Marine Corps commands that have demonstrated exceptional and sustained safety excellence.

This achievement is based upon aircraft flight mishap rates, currency of safety programs, the number of aircraft being flown

2nd MAW Marines Train Using Video Games

CHERRY POINT, N.C.—The tension in the room was palpable as the prototype of the Gaming Environment for Air Readiness (GEAR) system was booted. Program stakeholders loomed over the shoulders of anxious developers as the Marines of Marine Air Support Squadron (MASS) 1 prepared their demonstration of the program. Unit leadership observed as the Marines worked through air-control scenarios while plotting points on their maps, giving commands to a simulated pilot programmed with artificial intelligence. The Marines who work in the Direct Air Support Center (DASC) were training with only a desktop computer instead of using a large quantity of vehicles, gear, personnel and time.

“The role of the DASC is to control airspace,” said 2nd Lt. Joseph B. Greer, an air-support control officer with MASS-1 who was testing the GEAR. “While aircraft are in that airspace, we’re the ones who are telling them where to go and how they will go, as in altitude or specified route. We can deconflict aircraft paths with other supporting arms, like artillery, just to make sure that everyone’s getting where they need to be safely.”

Marines that work in the DASC have an important role in

military exercises involving aircraft. Controlling the ebb and flow of airspaces requires ample and continuous training, which can often be challenging to implement and maintain.

“Just to train personnel takes a lot of equipment, a lot of time and upwards of 60 Marines just to go out and do a live exercise,” said Kyle B. Tanyag, the lead software developer for the GEAR program. “I think [GEAR] would benefit the Marine Corps by allowing them to train without restricting them to just these live exercises.”

Electronically replicating a DASC is no easy feat, for many Marines are required to fill in the roles necessary to run the center. To supplement this, the GEAR features artificial intelligence characters to interact with the user.

“When I speak, there’s a speech-to-text feature that is sent to the AI,” Greer said. “From there, the AI picks out the critical pieces of information from what I spoke and discerns a proper response in order to simulate what a pilot would be saying to me.”

“We call it a rule-based AI system,” Tanyag said. “The student either text chats something or responds via voice. We take that and parse through what was said or typed. The AI takes

and the amount of time the aircraft spent supporting deployed operations.

"The safety award is truly a manifestation of the quality, safe, professional operations, both flying the aircraft, as well as the maintainers doing an incredible job with maintaining the platforms that we have," Whitesell said. "Our business is inherently dangerous, and it's the professionalism of the maintainers and aircrew that enable us to give confidence to the moms and dads that send you out into the world to defend your country. I can't do that myself; it's you all that do that."

Despite the unique challenges of an immensely large and diverse squadron, HSC-3 spearheaded COVID-19 operational risk controls, including distance learning and COVID patient transfer protocols, enabling the execution of 11,031 flight hours to qualify future warfighters in the MH-60S Knighthawk helicopter, as well as MQ-8B/C Firescout unmanned

aerial vehicles. The squadron also conducted firefighting operations in support of California Fire and Federal Fire, flying 56 hours and dropping 166 "Bambi Buckets" of water in support of the shore bombardment area (SHOBA) fire and the Corey Iverson Wildland exercise. HSC-3's proactive participation and feedback in the Safety Systems Working Group, Naval Air Training and Operating Procedures Standardization (NATOPS) Program Manager Summit, and Mine Warfare Improvement Program (MIWIP) helped enable safe and responsible operations within the community.

HSC-4 executed 2,959 total flight hours while maintaining eight mission-capable aircraft while embarked aboard the Nimitz-class aircraft carrier USS Carl Vinson (CVN 70) and the Lewis and Clark-class dry cargo and ammunition ship USNS Washington Chambers (T-AKE-11), as well as detachments to Naval

Air Station Fallon, Nevada, and Naval Air Facility El Centro, California. Overall, the squadron has flown more than 69,128 hours without a Class A mishap.

The "Titans" acquired 10 additional aircraft and supported two deployments, including the inaugural deployment of three CMV-22B Osprey aircraft as part of the Carl Vinson Carrier Strike Group. VRM-30 successfully deployed one detachment, conducted independent operations, and supported VRM-50, the Navy's CMV-22B Fleet Replacement Squadron (FRS), during their Safe-for-Flight certification. The Titans flew 1,022 sorties totaling 2,039 flight hours, including 520 night hours, with no aviation mishaps.

"There is no differentiation between our safety performance and our operational performance," Whitesell said. "You must have both at the same time. A safe squadron is also an operationally effective squadron."

*Written by Petty Officer 1st Class
Sara Eshleman. ✈️*



Marine Corps Lance Cpl. Matthew R. Gignac, an air-support operations operator with Marine Air Support Squadron (MASS) 1, operates a prototype of the Gaming Environment for Air Readiness at Marine Corps Air Station Cherry Point, North Carolina., July 28.

that input, and given the context of those messages, is able to respond."

Although still a prototype, the Marines of MASS-1 are optimistic about the potential impact the GEAR could have on training.

"I've been at MASS-1 for almost a year, and I think this could be really beneficial for newer Marines, myself included," said Lance Cpl. Matthew R. Gignac, an air-support operations

operator with MASS-1. "Doing it like this, in a way less stressful environment, makes it really good training. If it was more developed it could definitely help progress Marines."

The Marines of MASS-1 will continue to test new versions to help determine if the GEAR can potentially augment or replace traditional on-the-job training in the future.

Written by Lance Cpl. Elias Pimentel, 2nd Marine Aircraft Wing. ✈️

First Student Naval Aviators Begin Training in New Helicopter System

MILTON, Fla. – Twelve student naval aviators at Naval Air Station (NAS) Whiting Field in Milton, Florida, began advanced helicopter training in the new TH-73A Thrasher aircraft in early September.

NAS Whiting Field accepted the first TH-73A in August 2021 as a replacement for the 40-year-old TH-57 Sea Ranger aircraft. The TH-57 Sea Ranger provides basic helicopter training and advanced Instrument Flight Rules training to hundreds of aviation students a year at NAS Whiting Field. The current TH-57B was introduced in 1981, followed by the TH-57C in 1982, which will be phased out as the TH-73A comes onboard.

“Training students in the TH-73A has been years in the making, and I’m excited on behalf of everyone who has helped get us to this point,” said Cmdr. Annie Otten, commanding officer, Helicopter Training Squadron (HT) 8. “I’m especially excited that the HT-8 “Eightballers” are the ones helping transition the students and instructors to the new aircraft. We are all on this journey together, and I can’t wait to get the students up in the aircraft.”

Otten commented that the TH-73A will make student training more reflective of fleet helicopters, thus streamlining the training. Students in primary aviation training initially fly the T-6B Texan II aircraft, which has a glass display cockpit. If selected for helicopters, students move into the current TH-57, which has older digital or analogue displays.

Upon graduating from advanced helicopter training, students will then move out to fleet aircraft, which use glass display cockpits. Thus, they are required to transition several times using dif-

ferent technology during training. The TH-73A has glass screens that are representative of, and mirror more closely, what pilots will see in the fleet.

“The first thing we are going to see with the students is that the glass cockpit they have trained to and the scan they developed in the T-6 are going to flow to this aircraft, and we will see them picking things up sooner than in the TH-57,” Otten said.

Additionally, Training Air Wing Five and Chief, Naval Aviation Training (CNATRA) personnel have been working over the past several years to develop efficiencies in the training program in preparation for the new helicopter.

“Academic engineers and multiple PhDs gave input, and we looked at the theory of learning to affect a more effective syllabus so the students can use the information,” said Capt. Jack Waldron, U.S. Marine Corps TH-57 & TH-73A pipeline officer. “For the instructor pilots (IPs)—we started to train on the Leonardo AW-119, which is a bit different than the TH-73A. We had to replicate maneuvers, validating and adjusting so there was a well-designed and well-thought-out, safe program. Our goal was to make this as safe and effective a program as we could.”

Getting to the point where (IPs) could fly the TH-73A and then begin training the students was a process in itself.

“First we had to learn to fly the aircraft so we could teach the IPs,” said Maj. Luke Zumbusch, U.S. Marine Corps, one of the first cadre of instructor pilots to convert to the TH-73A. “Our job was to validate and verify that we could teach the maneuvers safely. For



*TH-73A Students:
Training Air Wing
Five's first 12 student
naval aviators to
begin training in the
new TH-73A Thrasher
helicopter stand
in front of one of
the aircraft in early
September.*

Photo by Lt.jg. Nelson Chandler

example, a normal approach, steep approach, formations for the IPs who eventually teach students in the TH-73A. Validating that the syllabus flow is good, the pace and type of training and the media in which the training was presented was the instructors' under training (IUT) job. Their job was to validate those maneuvers and profiles."

Before students begin flying the new helicopter, they will complete a rigorous course of groundwork in virtual reality and flying simulators to get them ready for the more powerful helicopter.

"We took this time to do an entire cultural change (in transitioning to the TH-73A)," Waldron commented. "There is the concept of having iPads with access to course content and aviation-specific apps for flight planning, briefing or in-flight navigation. We're not just changing the method of delivery, we're changing the actual media they're using. Virtual reality environment also provides a mixed reality environment. Students will ask questions. It's a philosophy change."

From start to finish, the aviation students spend approximately 38 weeks in the advanced training regimen at Whiting before they graduate and move to larger operational helicopters in the fleet, such as the H-60, H-53 and AH-1 helicopters.

According to Waldron, CNATRA and Wing personnel have been planning and developing the new Advanced Helicopter Training System for five years, to include infrastructure and maintenance for the new TH-73A.

"With every transition to a new airframe there are going to be challenges," said Capt. Jade Lepke, U.S. Navy, Commodore, Training Air Wing 5. "What we've seen in the end is the team has really come together. I've been proud and impressed with how far we've come with the ability to affect change and improve training. We are all working together and everyone is invested in making this training program the safest and most effective in the Navy."

Written by Julie Ziegenhorn, Naval Air Station Whiting Field. 🛩️

VMFA-314 "Black Knights" Return from Historic Deployment

MIRAMAR, Calif.—The "Black Knights" of Marine Fighter Attack Squadron (VMFA) 314 returned in August from their deployment with Carrier Air Wing (CVW) 9 aboard USS Abraham Lincoln (CVN 72). The Black Knights are the first Marine Corps squadron to deploy the F-35C Lightning II aboard an aircraft carrier.

While underway for more than 200 days, the Abraham Lincoln Carrier Strike Group sailed more than 65,000 nautical miles conducting deterrence and presence operations, and demonstrating the interoperability of the Navy and Marine Corps team. By leveraging their complementary authorities and capabilities, this team advances the prosperity, security and promise of a free and open, rules-based order.

"The Black Knight's successful deployment of F-35C Lightning II aircraft aboard USS Abraham Lincoln further reinforces 3rd Marine Aircraft Wing's (MAW) commitment to naval integration," said Marine Corps Brig. Gen. Robert B. Brodie, 3rd MAW assistant wing commander. "This historic deployment is a testament to our readiness and lethality as we project warfighting capabilities whenever and wherever our nation calls"

Through the course of the deployment, VMFA-314 flew nearly 1,200 sorties and logged more than 2,200 flight hours. The Black Knights and CVW-9 participated in dual carrier operations in the South China Sea with the Carl Vinson Carrier Strike Group, joint exercise Valiant Shield, bilateral exercises Noble Fusion and Jungle Warfare and Exercise Rim of the Pacific.

VMFA-314 was the first Marine Corps squadron to receive the F-35C Lightning II after retiring their legacy F/A-18C aircraft, and is comprised of approximately 200 Marines and Sailors.

3rd MAW continues to "Fix, Fly and Fight" as the Marine Corps' largest aircraft wing, and remains combat-ready, deployable on short notice and lethal when called into action.

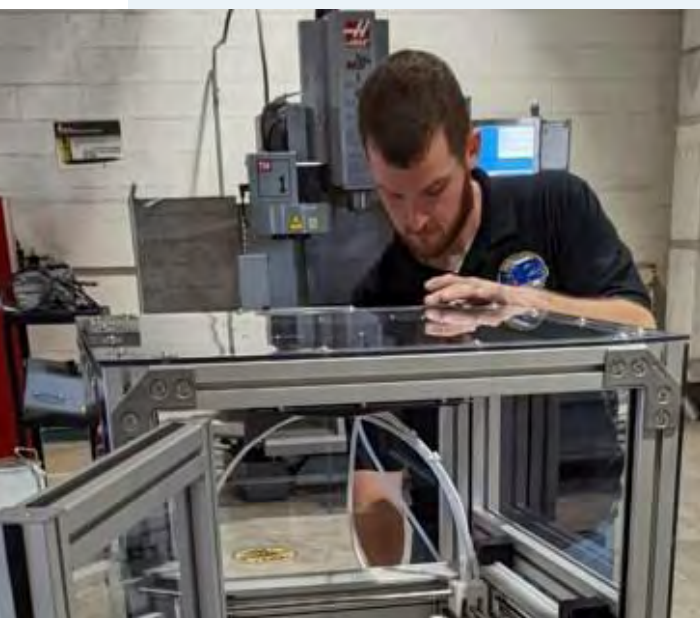
Written by 1st Lt. Duane Kampa, 3rd Marine Aircraft Wing. 🛩️



U.S. Marines with Marine Fighter Attack Squadron 314, Marine Aircraft Group 11, 3rd Marine Aircraft Wing (MAW), return to Marine Corps Air Station Miramar, California.

U.S. Marine Corps photo by Cpl. Sean Potter

Marines Move Out with First Tier 1 Expeditionary AM Machine



AM Installation Lead Andrew Graham prepares the T1X system for training at MALS-39.

PATUXENT RIVER, Md.—Maintainers at Marine Aviation Logistics Squadron (MALS) 39 at Marine Corps Base Camp Pendleton, California, can now deploy an additive manufactured (AM) capability in contested logistics environments thanks to a newly installed Tier 1 Expeditionary (T1X) desktop polymers AM system. Additive manufacturing is the industrial production name for 3D printing.

Recently deployed by the Naval Air Systems Command (NAVAIR) Sustainment Group's (NSG) AM Team, T1X is the first deployable AM system in support of Naval Aviation, according to NAVAIR AM Program Manager Ted Gronda.

"The system enables Marines to manufacture parts in support of naval aviation and related support equipment on-demand, at the point of need, in forward deployed locations where traditional logistics may be contested," he said.

The Marines can get right to work as there are already 126 different approved Tier 1 AM parts in support of Naval Aviation uploaded to the AM part repository hosted on a DOD website.

"Fleet maintainers can also nominate candidate AM parts through a NAVAIR AM part request process as well as produce their own AM parts for job aids (a device which simplifies a task), tools, jigs and prototypes,"

AM Team Senior Fleet Liaison Officer Navy Capt. Alex Peabody said.

AM has already proved its success at MALS-39. Josh Palmer, an Air Vehicle Systems Engineering Technician from the H-1 Fleet Support Team at MALS-39, said he successfully used their Tier 2 AM system (industrial polymer) to successfully print a job aid.

"When a manual tool failed and was causing additional work, we were able to get job aid designed and printed that allowed the use of a hydraulic tool. This new AM job aid and process removed bushings in seven minutes, compared to a manual process that could take as long as 48 hours," he said.

Marine Corps Col. Nathan Marvel, the commanding officer for Marine Aircraft Group 39, stated that he was not only impressed with the capability it provided to his maintainers, but also expressed his intention to expand its use.

"As the AH-1Z and UH-1Y type/model/series lead, I see immense potential with additive manufacturing for these H-1 platforms," Marvel said. "I intend to be very active ensuring AM further develops for these H-1 platforms."

MALS-39 maintainers attend training on the T1X system.

"Providing this much needed capability that addresses supply gaps and directly leads to improved operational readiness to our system maintainers while reducing maintenance man-hours gives the AM team a sense of momentum," Peabody said. "The installation at MALS-39 is one of nearly 90 planned Tier 1 desktop polymer, Tier 1X, Tier 2 industrial polymer and Tier 3 metal additive manufacturing installations across various Navy and Marine Corps locations."

"This shows what can be accomplished when a team collaborates together with a single goal," he said.

From the Naval Air Systems Command Sustainment Group. 🦋

Navy Demos Wide Range of VTOL Systems for Future Operations

PATUXENT RIVER, Md.—The Navy and Marine Corps Small Tactical Unmanned Aircraft Systems program office put Vertical Takeoff and Landing (VTOL) systems through their paces during a two-week technical demonstration in mid-September.

More than a dozen vendors attended the event to help inform the Navy Expeditionary Warfare community of the functions and capabilities available on the commercial market. The VTOL systems represented a wide range of configurations including outdoor, indoor, hybrid VTOL/fixed wing, and tethered flight capability.

In partnership with the University of Maryland UAS Test Site, the program office's Family of Small UAS (FoSUAS) team evaluated each system against a standard test card to determine its suitability for expeditionary combat support. In addition to basic measurements like length, height, weight, and pack-up size, performance data was collected for ease of operation, range, endurance, audibility, electro-optical and infrared imagery quality, and other unique capabilities of each system.

"The goal was to understand what the state of the market is today," said Col Victor Argobright, program manager. "We want to show off what is available right now for future procurements to our Navy Expeditionary community."

Participants representing the Naval Special Warfare, Navy Explosive Ordnance Disposal, and Naval Construction Force communities and their Joint Service counterparts were given the opportunity to engage directly with the participating vendors and to observe the flight demonstrations. Each participant was also asked provide their feedback on the potential of each system to fulfill their unique mission requirements.

"Flight demonstration events like this are a critical market research function for the PMA and help us to validate per-



A vendor demonstrates the vertical takeoff and landing capability of a small unmanned aircraft system during a Navy and Marine Corps Small Tactical Unmanned Aircraft Systems program office sponsored technical assessment Sept. 20 in California, Maryland.

formance data reported by vendors," said Lt. Cmdr. Ben Whatley, FoSUAS military lead. "We want to put these systems through their paces while also providing a venue for end-users to learn about existing and emerging SUAS technology. Moreover, events where operators from the supported Navy communities come together to collaborate and exchange information about their unique SUAS program needs provide added value to the program office by ensuring unity of vision and a corresponding unity of acquisition effort."

The majority of systems demonstrated last month are currently in production and available for procurement. Vendors also had the opportunity to showcase additional, developmental capabilities, though these systems were not evaluated against any of the standardized test cards.

"Unmanned systems technology is advancing at an incredible pace," Argobright

said. "To ensure that our Navy and Marine Corps teams are able to adapt to and outmatch the capability advancements of our adversaries, it is imperative that we leverage rapid acquisition solutions in order to put relevant technology in the hands of the warfighter faster."

The program office will use University of Maryland UAS Test Site's assessment data and observer feedback from the event to inform the program's priorities for follow-on engineering assessments, potential for operational testing, and inclusion of new platforms within the FoSUAS programs of record.

The FoSUAS integrated product team currently supports Group 1 and 2 SUAS including the PD-100 Black Hornet 3, Skydio X2D, SkyRaider R80D and RQ-20B Puma.

From the Navy and Marine Corps Small Tactical Unmanned Aircraft Systems Program Office. 🦅

EA-18G Growler Returns To The Skies Five Years After Mid-Air Collision



U.S. Navy photo

EA-18G Growler 515, assigned to Electronic Attack Squadron (VAQ) 129, arrives wingless at Naval Air Station Whidbey Island, Washington, before undergoing refurbishment.

NAVAL AIR STATION NORTH ISLAND, Calif.—An EA-18G Growler, attached to Electronic Attack Squadron (VAQ) 129, successfully completed a functional check flight Oct. 17 at Naval Air Station (NAS) Whidbey Island, Washington, marking the end of a complex transformation process for an aircraft thought to be beyond repair. This five-year effort demonstrates large-scale teamwork between multiple organizations over an extended timeline.

The aircraft, then attached to the “Wizards” of VAQ-136, was involved in a mid-air collision with another aircraft attached to Carrier Air Wing (CVW) 2 at NAS Fallon, Nevada, during a training event on Sept. 14, 2017. Both aircraft landed safely and the aircrew were uninjured. The Growler remained at NAS Fallon for several years, as refurbishment of this nature had never been done before and there were no processes or procedures on exactly how the repairs could be completed.

Upon initial inspection, there was little hope the aircraft would be fit to fly due to the complexity of the repairs required following the mishap, as well as weather damage from years of sitting in a desert environment. However, after thorough analysis and continued coordination, the Growler’s road to recovery began when clearance for repair was granted in 2021. In February of that year, the aircraft was loaded onto a flatbed truck

and transferred to the Fleet Replacement Squadron, VAQ-129, at NAS Whidbey Island.

Classified as a “special rework,” funding was approved and a long-term hangar space was identified for the unprecedented project. For more than a year, engineers, maintainers and artisans from facilities across the United States collaborated to develop processes, complete repairs and thoroughly inspect the recovered aircraft—more than 2,000 man hours in total.

“This was a team effort by personnel from Fleet Readiness Center (FRC) Southeast, FRC Southwest Engineering and my team from FRC Northwest,” said Tommy Moore, depot lead for FRC Northwest. “We reassembled the aircraft by replacing all major components and turned the aircraft back over to VAQ-129 as a ‘special rework’ complete on April 24, 2022.”

The Growler will soon be transferred to an operational squadron in order to deploy around the globe and be ready to conduct flight operations for decades to come. Capt. David Harris, Commodore, Electronic Attack Wing Pacific, commended the efforts of the entire Naval Aviation Enterprise in the accomplishment of this first-of-its-kind mission.

“It was truly amazing to watch the entire Naval Aviation Enterprise team come together to get this much-needed asset back up to flight status,” Harris said. “From the engineers who developed the needed repair designs, to the artisans who accomplished the complex repairs, to the VAQ-129 Sailors who ultimately rebuilt the aircraft to a flight status; it was a true team effort.”

From Commander, Naval Air Forces. 🦅



U.S. Navy photo

EA-18G Growler 515, assigned to Electronic Attack Squadron (VAQ) 129, is refurbished at Naval Air Station Whidbey Island.

Navy Evaluates New Crash Crane, Increasing Capability, Availability



U.S. Navy Photo

The Navy's Common Aviation Support Equipment program office is currently evaluating Electromagnetic Environmental Effects (E3) on a Crash and Salvage Crane (CSC) at the Aircraft Anechoic Test Facility in Patuxent River, Maryland.

PATUXENT RIVER, Md.—The Navy's Common Aviation Support Equipment Program Office is currently evaluating Electromagnetic Environmental Effects (E3) on a Crash and Salvage Crane (CSC) at the Aircraft Anechoic Test Facility in Patuxent River, Maryland.

Electromagnetic waves within the Radio Frequency (RF) spectrum are used for communication, radar and information networks aboard ships. The E3 evaluation currently underway in the Aircraft Anechoic Test Facility will determine the CSC's compatibility with the RF environment.

RF cannot be seen or felt, but it can negatively affect other electrical systems if those systems are not properly protected. Testing will determine if the CSC has an appropriate level of emis-

sions, can withstand a general level of radiation across the whole RF spectrum, and can withstand high levels of radiation tailored to frequencies in its operational environment.

"The new amphibious and carrier CSC designs will ensure the warfighter has the safest, most modern and reliable equipment possible for years to come," said Jim Choflet, program office Crash Crane team lead.

CSCs are critical pieces of equipment because no flight operations are allowed on ships without an operational CSC running on standby. They are used for lifting and moving disabled aircraft on carriers and landing helicopter dock flight decks. The new version, designed by industry partner Allied Systems Company, replaces the

legacy carrier and amphibious assault crash cranes.

The legacy CSCs were designed decades ago and have been a workhorse in the fleet for many years, having exceeded their anticipated life expectancy. They have become increasingly difficult to maintain due to obsolescence issues.

The carrier CSC (CCSC) and the amphibious CSC (ACSC) variants are very similar. The CCSC has a heavier counterweight than the ACSC, and the lighter ACSC has beams within the width of the crane that increase its stability. The similar designs, along with the new electronic controls greatly simplify maintenance over the legacy cranes.

From the Common Aviation Support Equipment Program Office. 🦋

Navy Contracts MQ-9 Reapers for Marine Corps, Extending Range for Future Operations

PATUXENT RIVER, Md.—The Navy recently awarded a \$135.8 million contract to General Atomics Aeronautical Systems Inc. (GA-ASI) for eight MQ-9A Extended Range (ER) Unmanned Aircraft Systems that are scheduled for delivery to the Marine Corps in late 2023.

MQ-9A ER will provide a large scale, long-range intelligence, surveillance and reconnaissance capability for the Marine Expeditionary Force. It is designed to extend the aircraft's endurance to more than 30 hours and equipped with triple redundant avionics architecture.

As part of the Marine Corps Force Design 2030 efforts, the Marines plan to transition Unmanned Aerial Vehicle Squadron (VMU) 3 located at Kaneohe Bay, Hawaii, from RQ-21 Blackjack to MQ-9A operations. VMU-3 will utilize the MQ-9A ERs to support training for the Marine Littoral Regiment.

The Multi-Mission Tactical UAS Program Office, which manages the Marines MQ-9 program, used the Air Force's Agile Reaper Enterprise Solution (ARES) to award the contract. ARES is a five-year fixed indefinite delivery/indefinite quantity contract.

"Our team has ensured the development and fielding of a new combat capability, critical for the Marine Corps Force Design (FD) 2030 vision, at an exceptional speed," said Capt. Dennis Monagle, program manager.

Since the program's inception in 2018, the program office has leveraged Air Force investments and contracting solutions to procure MQ-9, ultimately accelerating the fielding time. By tailoring and streamlining the typical acquisition strategy, the MQ-9 program commenced post-Milestone C, eliminating three to five years of traditional acquisition efforts.



"We closely aligned with the Air Force MQ-9 System Program Office, National Guard Bureau, Marine Corps stakeholders, as well as our vendor teams in order to develop and integrate as quickly as possible," Monagle said.

The first two MQ-9 aircraft were delivered in 2019 to VMU-1 at Marine Air Corps Station Yuma, Arizona, and since then have flown over 15,000 operational flight hours. The program continues to develop new, unique payloads and capabilities to meet future requirements for FD 2030. These payloads include the Detect and Avoid System (DAAS),

a Proliferated Low Earth Orbit (PLEO) satellite system, an airborne network extension payload (Sky Tower) and an electronic warfare payload.

The MQ-9A and associated payloads will provide the Marines with organic network extension and intelligence, surveillance, reconnaissance, and targeting (ISR-T) in support of expeditionary advanced based operations, littoral operations in contested environments and maritime domain awareness.

From the Multi-Mission Tactical Unmanned Aerial Systems Program Office. 🦅



Navy Fast-Tracks Contract for MQ-9 Reaper Advanced Technology

PATUXENT RIVER, Md.—The Navy recently awarded an \$8.4 million contract to multiple vendors for the Marine Corps’ MQ-9 Reaper Airborne Network Extension (ANE) Skytower II (STII).

Industry partners Global Air Logistics and Training (GALT), Northrop Grumman and L-3 Harris will perform work to develop the first phase of STII, a network pod that will add an additional capability to support the MQ-9 Reaper’s operational missions.

The Multi-Mission Tactical Unmanned Air System Program Office awarded the contract under an Other Transaction Agreement/Authority (OTA)—a contract vehicle used by the government to streamline research and development and prototype development.

“This OTA allowed the contracts team to tailor the scope of the project and narrow down vendor capabilities by releasing a Statement of Need (SON) early on,” said Michelle Dutko, STII

The MQ-9 Reaper provides Marines with a long-range intelligence, surveillance, and reconnaissance capability in support of expeditionary advanced based operations, littoral operations in contested environments, and maritime domain awareness.

team lead. “The OTA also provided the opportunity for the team to develop the statement of work with vendor input therefore streamlining the normal processing time to contract award.”

After the first phase of research and development is complete, the Navy and Marine Corps plan to prototype demo on surrogate aircraft and then prototype the system on an MQ-9A aircraft, Dutko said.

STII is required to execute the Intelligence, Surveillance and Reconnaissance (ISR) concept of operations by providing tactically relevant operational communications and data sharing capabilities at the tactical edge. It supports interoperability with existing STI capabilities to include multiple waveforms.

The ANE will have provisions to complement a collection of onboard sensors and off-board systems, and facilitate the retransmission, cross-banding and translation of data across gateway-connected networks. It will also enhance battlespace awareness and information sharing capabilities amongst the integrated Naval and Joint Force, connecting disparate networks and enabling the execution of mission-critical information exchange requirements.

The MQ-9 Reaper provides Marines with a long-range ISR capability in support of maritime domain awareness and expeditionary advanced based operations in contested environments. MQ-9’s are scheduled to deploy with this new system in 2026.

From the Multi-Mission Tactical Unmanned Air System Program Office. 🦅

End of an Era: Navy Conducts Final AQM-37 Target Launch

PATUXENT RIVER, Md.—The Navy launched the last two remaining AQM-37 targets Sept. 22 in support of the U.S. Army's Integrated Fires Mission Command operations at White Sands Missile Range, New Mexico.

"The final launch of the AQM-37 represents the closing of a chapter for the Aerial Targets Program Office and our industry partners, but also intensifies our focus and provides us the opportunity to start and sustain new chapters with more advanced technology and capabilities that closer resemble the threats we face," said Don Blottenberger, program manager.

Since 1962, more than 5,000 AQM-37 targets have been delivered and launched in various training and system development operations across the globe. The system replicated both air-to-air and air-to-surface threats and was able to fly simulated ballistic missile profiles at altitudes of up to 300,000 feet.

"The legacy of the AQM-37 and those who were involved in its development and sustainment through the decades will not be forgotten," Blottenberger said. "Its 60-year lifespan is a testament to its capability, reliability and the critical role it has played in the security and preparedness of both our own, and our international partners' armed forces."

Over six decades, the target played an instrumental role in the testing and deployment of new systems including short-range air-to-air missiles including the Air Intercept Missile (AIM-9)

Sidewinder, ship-borne short-range anti-aircraft missiles including the Sea Sparrow Missile (RIM-7) and ships equipped with missile defense (AEGIS) systems. The targets supported both domestic and international partners including NATO nations and was commonly used in conjunction with the U.S. Air Force, most often launched from the F-16 Fighting Falcon.

Just recently, the Air Force's 412th Test Wing launched seven AQM-37 targets from F-16s to support testing of E-2D Advanced Hawkeye and F-35 Lightning II capabilities at Navy Exercise Gray Flag at the Point Mugu, California, Sea Range. The AQM-37's involvement in this exercise, and countless others, enhanced capability and supported mission readiness for joint forces.

"Our supersonic technical team has done fantastic work over the last several years to get the final targets launched and put to use in a way that supports development and testing for our military," Blottenberger said. "The team saved the Navy close to \$1 million by avoiding demilitarization of the last several targets by using them for the Navy Gray Flag Exercise and other test and evaluation events."

The Aerial Targets Program Office provides threat representative aerial targets for fleet training and weapons systems test and evaluation.

From the Aerial Targets Program Office. 🦅



U.S. Army photo

The Navy prepares to launch the final AQM-37 targets Sept. 22 in support of the U.S. Army's Integrated Fires Mission Command operations at White Sands Missile Range, New Mexico.

Domestic H-1 Production Concludes, Manufacturing for International Customers Continues



U.S. Marine Corps photo by Cpl. Levi Voss

Marine Corps Col. Nathan “MOG” Marvel, commanding officer of Marine Aircraft Group (MAG) 39, 3rd Marine Aircraft Wing (MAW) unloads gear from the final AH-1Z Viper produced for the Marine Corps on Marine Corps Air Station Camp Pendleton, California, Nov. 4.

PATUXENT RIVER, Md.—Following an unprecedented on-time delivery record, the Marines received its final AH-1Z Viper as mapped out by the service’s program of record (POR).

“H-1s are key to the 2022 Marine Corps Aviation Plan,” said Col. Vasilios Pappas, Light/Attack Helicopters Program Office program manager. “With the U.S. program of record now complete, the Marines have the flexibility to manage and deploy the helicopters based on current and future mission requirements as established at the start of the program.”

The H-1 program consists of the AH-1Z and the UH-1Y aircraft; their integration spans the full spectrum of warfare in range, combat power and flexibility. H-1s are uniquely adept at distributed maritime operations to enhance expeditionary advanced base operations from a mix of traditional amphibious and non-traditional ships and shore-based sites.

In October, the program recognized the acquisition milestone during a ceremony at Bell’s Amarillo Assembly Center, the original equipment manufacturer of the aircraft. Following the ceremony, the aircraft on display, an AH-1Z designated for the 3rd Marine Aviation Wing, flew to Marine Corps Base Camp Pendleton, California, marking the final domestic delivery.

“Completing the domestic H-1 program of record by delivering AH-1Z Vipers and UH-1Y Venoms to the U.S. Marine Corps, is an impressive milestone,” said Gary Kurtz, Program Executive Office for Air Anti-Submarine Warfare, Assault and Special Mission Programs during the ceremony. “This feat would not be possible without our solid foundation of teamwork, unwavering commitment to the warfighters and the strong relationships we have built across our government, industry and supplier teams.”

H-1 production continues for the

program’s international customers: Bahrain and the Czech Republic.

“This is far from where the H-1 story ends,” Pappas said. “Production is important; after all, it brings us the aircraft. But perhaps even more important: keeping the fleet flying for decades to come through effective sustainment, supplier management and future upgrades.”

In support of long-term sustainment, the program office has integrated various reliability and maintainability efforts, designed to improve component and system availability, increase mission capable rates and reduce maintenance cost per flight hour.

Light/Attack Helicopters Program Office manages the cradle to grave procurement, development, support, fielding, sustainment and disposal of the Marine Corps and international H-1 systems.

From the Light/Attack Helicopters Program Office public affairs. 🦅

CNATRA Flight Surgeon Earns Wings of Gold

A flight surgeon attached to Training Squadron (VT) 35 of Training Air Wing Four recently earned his Wings of Gold, the first Aeromedical Dual Designator (AMDD) to transition from flight surgeon to pilot in 20 years.

Lt. Danny Xu, a native of New York, was joined by friends and family at the Catalina Club aboard Naval Air Station Corpus Christi, Texas, as he received his wings designating him a naval aviator.

Xu attributes his drive to pursue a medical degree to his parents, who are both doctors. He also had many friends from high school who enlisted in the Navy, which made him curious about following that as a career path.

"I always thought about aviation and wanted to fly, but I didn't know how to fly and no one around me knew, so I always kept it in the back of my mind," Xu said. "After talking to a recruiter, I was made aware of the medical scholarship program and ultimately decided to apply to med school."

His first duty station was Portsmouth Medical Center for his first year of residency in general surgery, where he applied and was accepted for the flight surgeon program. Following training in Pensacola, Florida, he graduated in May 2018, earning his wings as a Naval flight surgeon.

His first official flight surgeon tour brought him to NAS

Corpus Christi to serve as flight doc to the "Rangers" of Training Squadron (VT) 28. The time he spent with the students and instructor pilots of VT-28 was pivotal in his growing interest in aviation and would ultimately give him a unique perspective as a future flight student.

"When I decided to pursue the dual designator path and transition to flight school, I was fortunate to be a flight surgeon for the first two years and met so many student pilots going through training," Xu said. "I was able to see their side of training with an outsider's perspective and utilize that to further help my classmates once I started flight school by being a resource to their training."

Xu's time with the "Stingrays" of VT-35 gave him exposure to a wide range of aviation platforms and pilot experiences.

"Because I don't have fleet experience or deployment experience, a benefit from this tour is hearing the experiences of the instructor pilots here," Xu said. "I get to hear their personal accounts of deployment and flying experience. Having a broad understanding of the Naval Aviation Enterprise at a single location is one of the biggest perks I take away from the CNATRA [Naval Air Training Command] mission. I had access to pilots from every Navy platform, fixed wing, rotary, jet. All the talents come back here to teach."



Lt. Danny Xu stands with his fellow naval aviators to recite the Flyer's Creed after receiving his Wings of Gold, Aug. 5.

U.S. Navy photos by Anne Owens

Xu received guidance through this transition process from his mentor, Capt. Roderick Borgie, Commander, Naval Air Force Reserve Force Surgeon and chair, aeromedical dual designator advisory group. Borgie was the last AMDD from flight surgeon to pilot in 2000 and Xu is the first to follow that path since. He explains that the aeromedical dual designator program most commonly sees pilots who complete their line tours and subsequently train as flight surgeons.

“Although more rare to be a pilot after becoming a flight surgeon, that path has been traveled quite a bit,” Borgie said. “Famous astronauts Sonny Carter and Dave Brown each joined the Navy as flight surgeons and were selected for pilot training.”

Borgie sees the qualities needed for serving successfully as a dual designator in Xu.

“Danny has been a competent and compassionate doctor who has done well in the aviation lane through flight surgery school with an aptitude for flying,” Borgie said. “He gets the big picture of health in naval aviation, the camaraderie and trust he builds with aircrew, and using his team player attitude to advance the lethality of our Sailors.”

Xu selected to fly the CMV-22 Osprey and both he and Borgie see many practical applications for both designations in the tilt-rotor platform.

“Danny was uniquely chosen to pursue the tilt-rotor platform

for many reasons. It is a relatively new platform and is the only platform without a dual designator,” Borgie said. “The CMV-22 will be tasked with a part of the medevac system as a strategy is developed for medical care involving long distances in the Pacific. Having a subject matter expert in the aircraft platform capabilities who is also a subject matter expert in medevacs and enroute care will be crucial to informing future policies and decisions in this arena.”

Xu sees the CMV-22 Osprey as the ideal platform for accomplishing his professional goals as a dual designator. The Osprey is the replacement aircraft to the C-2 Greyhound and will primarily be carrier transport, personnel, cargo and patient transport. Whereas the Greyhound requires a catapult shot and arrested landings, the Osprey does not have those requirements.

Xu is a presence around the flight line, greeted by nearly every instructor pilot and student who walks past because they have met him either as a flight doctor or flight student. His impact at VT-35 was significant during the challenging time that COVID mitigation created for flight production.

Xu’s training will continue at his fleet replacement squadron in Marine Corps Air Station New River, North Carolina, to receive training in the MV-22 Osprey.

Written by Anne Owens with Naval Air Training Command (CNATRA). 🇺🇸



Lt. Danny Xu stands on the flight line of Naval Air Station Corpus Christi, in front of a T-44 Pegasus, May 11. Xu is the first Aeromedical Dual Designator (AMDD) to transition from flight surgeon to pilot in 20 years and received his Wings of Gold while attached to the “Stingrays” of Training Squadron (VT) 35.

Ford Executes F



The USS Gerald R. Ford (CVN 78) steams in the Atlantic Ocean, Oct. 20. The Gerald R. Ford Carrier Strike Group (GRFCSG) is deployed in the Atlantic Ocean, conducting training and operations alongside NATO Allies and partners to enhance integration for future operations and demonstrate the U.S. Navy's commitment to a peaceful, stable and conflict-free Atlantic region.

U.S. Navy photo by MC2 Jackson Adkins

First Deployment

By Commander, U.S. 2nd Fleet

The first-in-class aircraft carrier USS Gerald R. Ford (CVN 78), flagship of the Gerald R. Ford Carrier Strike Group (GRFCSG), returned Nov. 26 to Naval Station Norfolk, Virginia, after successfully completing its inaugural deployment throughout the Atlantic while conducting exercises and port visits with Allies and partners.

The flagship set sail from Norfolk Oct. 4, and traveled more than 9,275 nautical miles with GRFCSG.

During the scheduled deployment, Ford operated with eight Allies and partners, Canada, Denmark, Spain, France, Germany, the Netherlands, Finland and Sweden, to strengthen interoperability, while conducting a range of maritime operations and exercises.

“This deployment brought together an incredible group of Allies and partners with one single focus—to contribute to a peaceful, stable and conflict-free Atlantic region through our combined naval power,” said Vice Adm. Dan Dwyer, commander, U.S. 2nd Fleet and Joint Force Command Norfolk. “Opportunities to interoperate and integrate make our nations, our navies and the NATO Alliance stronger.”

While deployed, GRFCSG participated in Exercise Silent Wolverine, demonstrating high-end naval warfare and integrated NATO interoperability in the maritime

“The Sailors participating in Ford’s first deployment integrated multiple foreign nations’ ships into the strike group to operate together efficiently.”



An F/A-18E Super Hornet, attached to the “Tomcatters” of Strike Fighter Squadron (VFA) 31, approaches USS Gerald R. Ford’s (CVN 78) flight deck, April 11.

U.S. Navy photo by MC2 Nolan Pennington



U.S. Navy photo by MC2 Ryan Seelbach

Aviation Boatswain’s Mate (Equipment) Airman Devon Jackson, assigned to the aircraft carrier USS Gerald R. Ford (CVN 78) air department, prepares a C-2A Greyhound attached to the “Rawhides” of Fleet Logistics Support Squadron (VRC) 40 to launch during cyclic flight operations, Nov. 17.

approaches to Europe. Silent Wolverine was an opportunity for Ford to train and test capabilities while demonstrating the U.S. commitment to Allies and partners through seamless integration.

“We sailed with our Allies and partners and trained together, tirelessly, day and night, and we are stronger for it,” said Capt. Paul Lanzilotta, Ford’s commanding officer. “Through integrated and combined operations such as live and inert ordnance expenditure by Carrier Air Wing (CVW) 8, anti-submarine warfare, anti-surface warfare and air defense, we set the stage for operating with Ford-class technologies in a deployed environment. We completed more than 1,250 sorties, expended 78.3 tons of ordnance, and completed 13 underway replenishments—and we accomplished this because of what Ford-class aircraft carriers bring to the fight.”

The Sailors participating in Ford’s first deployment integrated multiple foreign nations’ ships into the strike group to operate together efficiently.

Essential Repairs Needed: Getting A Bird to Fly

The first-in-class aircraft carrier USS Gerald R. Ford's (CVN 78) aviation structural mechanics work with Sailors from various Fleet Readiness Centers (FRC), who are temporarily assigned to Ford's aircraft intermediate maintenance department (AIMD), to support the readiness of the various squadrons aboard.

Aviation Structural Mechanic Airman Hunter Scardami, assigned to Ford's AIMD, said he enjoys his job as a mechanic.

"We have so many different shops that we can go into and learn," Scardami said. "There are so many different things that we can then apply to our normal lives through the knowledge that we learned here on the ship. I love it."

According to Scardami, with the air wing aboard, individual squadrons are responsible for accomplishing organizational-level maintenance for their aircraft, which includes the units' day-to-day support of its own operations. The FRC Sailors aboard work alongside the ship's AIMD Sailors, performing intermediate-level maintenance to enhance and sustain their combat readiness and mission capability of supporting squadrons by providing an expanded knowledge base and a detailed understanding of intricate and specialized aircraft parts.

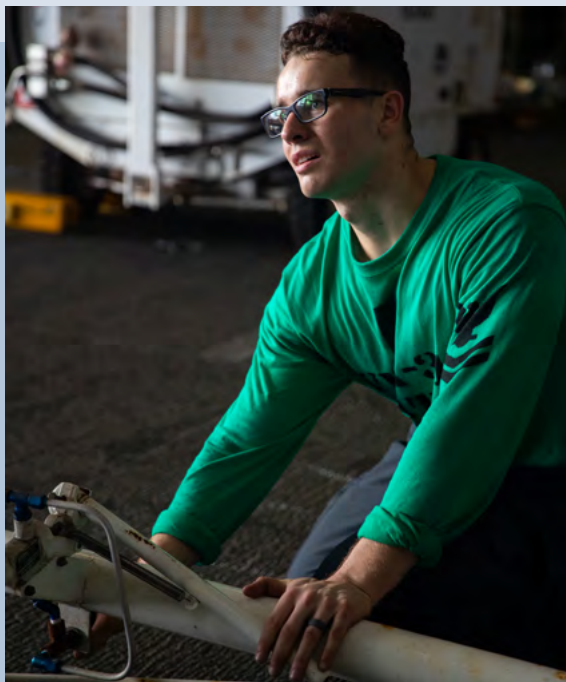
"It's great that we have the FRC Sailors aboard and how they are able to teach the ship's company what they work on," Scardami said. "A tail rotary blade came into our shop recently; I had no idea how to work on it, but the FRC sailors did. I got to help them and learned how to do the job myself."

Aviation Structural Mechanic 2nd Class Tate Fjetland, assigned to the Norfolk, Virginia, Fleet Readiness Center, is one of the Sailors who shares their knowledge with Ford's AIMD.

"You'll run into these types of equipment more often at FRC," Fjetland said. "You won't see these types of gears on a ship unless the air wing is aboard. We work with most of the squadrons on a regular basis in Norfolk."

Fjetland believes it is important to pass on the knowledge he has acquired to Ford's company.

"I like to train people, like Scardami, who are very enthusiastic and always ready to learn," Fjetland said. "The more people who know how to do a particular job, the easier it is on everyone and it helps that person in the long run as well."



U.S. Navy photos by MCSN Daniel Perez

Aviation Electronics Technician 2nd Class Daniel Patrick Black, assigned to the "Tomcatters" of Strike Fighter Squadron (VFA) 31, raises a ladder during routine maintenance on an F/A-18E Super Hornet.



The squadrons aboard Ford can efficiently accomplish their mission because of the combined efforts of both the FRC and Ford's AIMD.

"Without us, birds can't fly," Fjetland said.

Fjetland said FRCs save the Navy a lot of money on parts because of the work they do repairing equipment.

The Gerald R. Ford Carrier Strike Group (GRFCSG) is deployed in the Atlantic Ocean, conducting training and operations alongside NATO Allies and partners to enhance integration for future operations and demonstrate the U.S. Navy's commitment to a peaceful, stable and conflict-free Atlantic region.

Written by USS Gerald R. Ford Public Affairs. ✈️

Aviation Structural Mechanic Airman Jordan Dicker, right, and Aviation Structural Mechanic 3rd Class Brandon Coffman, both assigned to the "Blacklions" of Strike Fighter Squadron (VFA) 213, perform routine maintenance on an F/A-18F Super Hornet

Behind the Scenes: Tire Shop



Aviation Structural Mechanic Airman Keldon Haselden and Aviation Structural Mechanic Airman Sydney Powell, both assigned to USS Gerald R. Ford's (CVN 78) aircraft intermediate maintenance department, performs routine maintenance, Oct. 8.

Aviation Structural Mechanic 3rd Class Daniel Mitchell, assigned to the first-in-class aircraft carrier USS Gerald R. Ford's (CVN 78) aircraft intermediate maintenance department, performs routine maintenance, Oct. 8.



Pilots cannot taxi, take off or land an aircraft without tires. But whose job is it to service the tires?

The first-in-class aircraft carrier Gerald R. Ford's (CVN 78) tire shop is run by aviation structural mechanics (AM), and they are the only rate that work on aircraft tires.

Aviation Structural Mechanic 3rd Class Daniel Mitchell and Aviation Structural Mechanic Airman Keldon Haselden are two Sailors who work in the aviation tire shop of Ford as part of the aircraft intermediate maintenance department (AIMD) responsible for the upkeep of every tire onboard.

"The tire shop is responsible for the deconstruction,

inspection, replacement and cleaning of all aviation tires and rims onboard," Mitchell said.

There are all kinds of tires aboard Ford, including helicopter tires, plane tires, forklift tires, crane, and tractor tires. Mitchell and Haselden's shop specializes in aviation tires.

"I love working with my hands and the tire shop has definitely allowed me to do just that," Haselden said.

Inspecting each tire can include looking at the tread to see if it is cracked, frayed or worn. Some tires are deconstructed and then reconstructed for later use; others may just need to be filled with nitrogen. Some tires have ball bearings inside the rim, which may need to be cleaned or replaced.

"When reconstructing a tire, we take the bearings out and put them in the part washer, clean all the old grease and dirt out of the bearing," Haselden said. "We check for corrosion, re-grease it and wrap it with a liner and place them back into the tire."

Mitchell stated there is a log of each tire, showing its lifespan and how many landings it has been through.

"After a certain number of landings, the tire will be inspected and possibly replaced," Mitchell said. "Certain types of tires may not need to be replaced as often. Jet tires, for instance, may be replaced more often than helicopter tires."

After overall inspection of the tire, the next step is inspecting the rims, which are checked for corrosion, cracks, or bends. If the rims are damaged badly, the tire is placed into a beyond capable maintenance (BCM) status, which means the steps to complete the repairs are beyond the shop's capabilities. After the bad tire is scheduled to be sent off ship, supply orders a new replacement rim.

"Whenever you work with a tire you should always be cautious, even tractor tires can be dangerous," Mitchell said. "You have to be aware of air pressure and lug torque when working with tires. When the tires are filled they are placed in a tire inflation cage for safety; this can be very dangerous. Fully aired tires can be considered ordnance."

The tires are filled with nitrogen because it helps maintain air pressure longer than regular air. Also tires that are filled with nitrogen handle heat better. Each tire has fusible plugs that deflate the tire at 300 degrees Fahrenheit.

"It is meaningful to me knowing that the tire I fix or replace will serve a purpose in the completion of a mission," Mitchell said. "Without the tire shop, we couldn't complete the Navy's mission. It is an important part of the machine."

By Chief Petty Officer Gary Prill, USS Gerald R. Ford Public Affairs. ✈️

“Leading the men and women of the Gerald R. Ford Strike Group has been awe-inspiring. Every day these Sailors committed themselves 100 percent to a safe and successful inaugural deployment of Ford and the strike group,” said Rear Adm. Greg Huffman, commander, Carrier Strike Group (CSG) 12. “This deployment laid a strong foundation for the strike group, created momentum to carry us forward for future operations, and has prepared us to answer our nation’s call when needed.”

Ford made its first international port visit in Halifax, Nova Scotia, and its first European port visit in Portsmouth, U.K. For Ford Sailors, these port visits offered a long-awaited opportunity to explore and learn from different cultures.

Ford is the first new U.S. aircraft carrier designed in more than 40 years, introducing 23 new technologies that offer impressive advances to its aircraft launch system, propulsion, power generation, ordnance handling and more. Ford’s advanced technologies reduce the amount of personnel required to maintain and operate the ship’s systems compared to Nimitz-class carriers.



An MH-60S Knighthawk, attached to the “Tridents” of Helicopter Sea Combat Squadron (HSC) 9, prepares to transport ammunition to the aircraft carrier USS Gerald R. Ford (CVN 78) during an ammunition on-load with the Military Sealift Command Lewis and Clark-class dry cargo ship USNS William McLean (T-AKE 12), April 9.

U.S. Navy photo by Chief MCSN Gary A. Prill



Sailors assigned to USS Gerald R. Ford (CVN 78) and “Gladiators” of Strike Fighter Squadron (VFA) 106 conduct flight operations, Sept. 18.

U.S. Navy photos by MCSN Daniel Perez



An E-2C Hawkeye attached to the "Bear Aces" of Airborne Command and Control Squadron (VAW) 124 prepares to land aboard the aircraft carrier USS Gerald R. Ford (CVN 78), Nov. 14.



Aircraft attached to Carrier Airwing (CVW) 8 are positioned on the flight deck of aircraft carrier USS Gerald R. Ford (CVN 78), Nov. 11.

“On our ship, you don’t hear Sailors saying, ‘that’s the way we’ve always done it’ because we’re using new gear, new technologies.”

The Sailors of Ford are shaping the future of naval aviation.

“On our ship, you don’t hear Sailors saying, ‘that’s the way we’ve always done it’ because we’re using new gear, new technologies,” Lanzilotta said. “I am so proud of all their hard work and dedication that made Ford operational and allowed the Gerald R. Ford Carrier Strike Group to conduct a successful first deployment.”

While operating in the Atlantic, Ford hosted 215 distinguished visitors, 175 foreign dignitaries, 46 NATO flag officers and senior enlisted leaders, and more than 60 U.S. and international reporters aboard.

The U.S. commands and units that participated in the GRFCSG deployment include; CSG-12, CVW-8, Destroyer Squadron 2, Ticonderoga-class guided-missile cruiser USS Normandy (CG 60), Arleigh Burke-class guided missile destroyers USS McFaul (DDG 74) and USS Ramage (DDG 61) stationed at Naval Station Norfolk and USS Thomas Hudner (DDG 116) stationed at Naval Station Mayport, Florida.

The nine U.S. aircraft squadrons assigned to CVW-8 that embarked Ford for this deployment were Strike Fighter Squadron (VFA) 213, VFA-31, VFA-37 and VFA-87 stationed at Naval Air Station Oceana in Virginia Beach, Virginia; Electric Attack Squadron (VAQ) 142 stationed at Naval Air Station Whidbey Island in Whidbey Island, Washington; Airborne Command and Control Squadron (VAW) 124; Fleet Logistics Support Squadron (VRC) 40; Helicopter Maritime Strike Squadron (HSM) 70; and Helicopter Sea Combat Squadron (HSC) 9, stationed at Naval Station Norfolk. 🦅



The crew of the first-in-class aircraft carrier USS Gerald R. Ford (CVN 78) man the rails as the ship returns to Naval Station Norfolk, Virginia, Nov. 26, following the inaugural deployment with the Gerald R. Ford Carrier Strike Group (GRFCSG). More than 4,600 Sailors assigned to Ford operated in U.S. 2nd Fleet and 6th Fleet, increasing interoperability and interchangeability with NATO Allies and partners.

U.S. Navy photo by MC2 Jackson Adkins

50 Years Since First Flight, **E-2C Legacy**



Continues

By Carolyn Bauer and Rob Perry

The E-2C Hawkeye has been a linchpin in the Navy's command and control capabilities for more than 50 years. The all-weather, carrier-based tactical airborne early warning (AEW) aircraft recently celebrated its 50th anniversary of flight. Although the E-2C is scheduled for sundown in 2026, the aircraft's impressive legacy of capability and sustainability will live on.

An E-2C Hawkeye from the "Sun Kings" of Carrier Airborne Early Warning Squadron (VAW) 116, assigned to the aircraft carrier USS Nimitz (CVN 68), patrols the skies above the Arabian Sea, Nov. 28, 2020.

The E-2C has garnered a proud and enthusiastic community in its 50-plus years. Since entering Navy service with Airborne Early Warning Squadron (VAW) 123 at Naval Air Station (NAS) Norfolk, Virginia, in November 1973, the aircraft has been flown and meticulously maintained by thousands of Sailors. It has been used for sea and land-based military operations, search and rescue missions, drug interdiction, humanitarian efforts and disaster relief. It has even been used as Air Traffic Control (ATC) in emergencies when land-based ATC was unavailable.

The longest operational variant of the E-2, the E-2C has surely made an impression on the Navy and nation as a whole in its 50 years of honorable service. The sensors and radar have remained unmatched and the Fleet has been in great hands while the "digital quarterback of the sky" has been flying.

"The E-2C has had a long a long operational run in the Navy and a lot has changed," said Cmdr. Nolan "Jiggy" King, E-2/C-2 military class desk with the E-2/C-2 Command & Control Systems Program Office, and E-2C pilot. "The E-2Cs are a data fusion engine, taking information from its sensors, from other ships and aircraft sensors through data links, and incorporating real time intelligence information through other communication paths. We are able to bring all this together to get a much clearer picture of the battlespace you couldn't dream about 20 or 30 years ago."

Since its inception in 1971, the E-2C has continued to incorporate improvements to keep pace with technology advancements and the ever-changing operational environment. The aircraft had five major upgrades throughout the years before its current variant, the Hawkeye 2000 (HE2K), began production. As the E-2A and E-2B were found to be unreliable platforms, two E-2A test aircraft were modified as prototypes of the E-2C, with the first flying on Jan. 20, 1971. Trials proved satisfactory and the E-2C was ordered into production, with the first production aircraft performing its initial flight on Sept. 23, 1972. The original E-2C, known as Group 0, consisted of 55 aircraft with the first aircraft becoming operational in 1973. Additional variants include Group I, Group II and Group II Plus, each incorporating new and improved systems including radar and mission computers.

The aircraft has undergone several upgrades to its active and passive sensors, engines and propellers. The HE2K, with its new mission computer, im-

U.S. Navy photo by MC2 Greg Hall

proved radar displays and Cooperative Engagement Capability (CEC), combined with the shipboard Aegis weapon system, formed the cornerstone of sea based Theater Air Missile Defense (TAMD). HE2K transitioned to the sole E-2C variant in sustainment in March 2021.

“The fact that it is a twin-engine prop makes a lot of sense,” said Capt. Gregory “Cheese” Machi, in service deputy program manager, and E-2C pilot. “It is designed for an over-the-horizon blue water long-endurance surveillance mission and persistence to keep the radar on station for as long as possible. Prop-driven aircraft give you that capability.”

E-2C Hawkeyes were on the scene for several global conflicts. They provided airborne

command and control for successful air operations as part of Operation Desert Storm, and later in the 1990s, they supported Operations Northern and Southern Watch over Iraq. E-2s also supported NATO operations over the former Republic of Yugoslavia, including Operation Deny Flight.

“In response to the events of Sept. 11, 2001, E-2C aircraft launched in support of homeland defense operations. Their missions included airborne surveillance, ground communication relay and track management along the East Coast of the United States.”



U.S. Navy photo by MC3 Christopher Gaines

An E-2C Hawkeye with the “Sun Kings” of Carrier Airborne Early Warning Squadron (VAW) 116 prepares to land on the flight deck of the aircraft carrier USS Nimitz (CVN 68) during a composite training unit exercise (COMPTUEX), May 15, 2020.



U.S. Navy photo by MCSN Drace Wilson



An E-2C Hawkeye early warning and support aircraft assigned to the "Bear Aces" of Carrier Airborne Early Warning Squadron (VAW) 124 prepares to land on the flight deck of the aircraft carrier USS George H.W. Bush (CVN 77), March 7, 2017.

In response to the events of Sept. 11, 2001, E-2C aircraft launched in support of homeland defense operations. Their missions included airborne surveillance, ground communication relay and track management along the East Coast of the United States.

Machi recalled an instance on his last deployment where the E-2C's capabilities led to mission success, particularly due to the age of the aircraft's onboard equipment.

"We were in Carrier Air Group (CAG) 8, flying E-2C Group II Plus aircraft and deployed in the Mediterranean, supporting the war in Syria. The E-2s we were flying had legacy systems on board designed to fight Russian Cold War-era aircraft that were and are now highly proliferating in countries like Syria," Machi said.

King said E-2 crews are trained in such a way that they are always ready to perform multi-missions, and described one instance where the versatility of the crew and aircraft came into play.

"We were out doing a pilot training mission at an airfield up in Northern Virginia, and while doing landing practices, we heard a call come over the radio that there was an aircraft down off the coast," King said. "We always brief for search and rescue contingencies even if we're not doing a full mission. We assessed that we were in a place that we could cancel the mission we were on and go and assist the Coast Guard and the Navy in performing on



An E-2C Hawkeye is silhouetted on the flight deck of the aircraft carrier USS Harry S. Truman (CVN 75) March 8, 2008.

U.S. Navy Photo by MC3 Ricardo J. Reyes

scene commander duties. We were briefed, we were ready to go even with a reduced crew and not having planned to do it. We were able to make the initial location and vector in air and surface search assets and provide that essential command control until other dedicated assets were able to launch and get out to the scene.”

These instances provide only a glimpse of the E-2’s functionality in global and domestic affairs. Several international partners including Egypt, France, Israel, Japan, Mexico, Singapore and Taiwan have flown the E-2C. These aircraft sales solidified key foreign relationships, enhancing international security and interoperability and ultimately cemented the E-2’s legacy as the most capable command & control platform in the world.

Even as the HE2K was being delivered to the Fleet and international partners, the U.S. Navy was looking toward the next generation of command and control. The result is the E-2D Advanced Hawkeye (AHE). Reaching initial operational capability (IOC) in 2014, the E-2D features a state-of-the-art radar with a two-generation leap in capability and upgraded aircraft systems that improve supportability and increase readiness. The E-2D also now features aerial refueling capabilities, doubling on station time allowing for extended range from the carrier, increased persistence and operational flexibility. Compared to the E-2C, the E-2D greatly enhances operational capability in overland and littoral, in addition to open ocean environments. Japan and France have both purchased the E-2D AHE.

“Just as the E-2C has remained a reliable aircraft for the last 50 years, we anticipate flying the E-2D into the 2040s and beyond,” said Capt. Pete Arrobio, program manager.

“The E-2’s command and control aspects are [the enduring part of its legacy],” Machi said. “It helps us fight like a team and the E-2 is a big part of that team; that’s a good reason why the U.S. Navy is so highly capable. When you look back at the last 50 years in the history of carrier aviation, what is the only plane that is still operating from the aircraft carrier? It’s basically the E-2. It is still flying and it’ll continue to fly for probably another 30 years.”

King said some of the initiatives that began with the E-2C, such as improvements in satellite communications and the E-2C’s ability to “figure out ships names, where they’re going and what they’re carrying” is now standard aboard the E-2D.

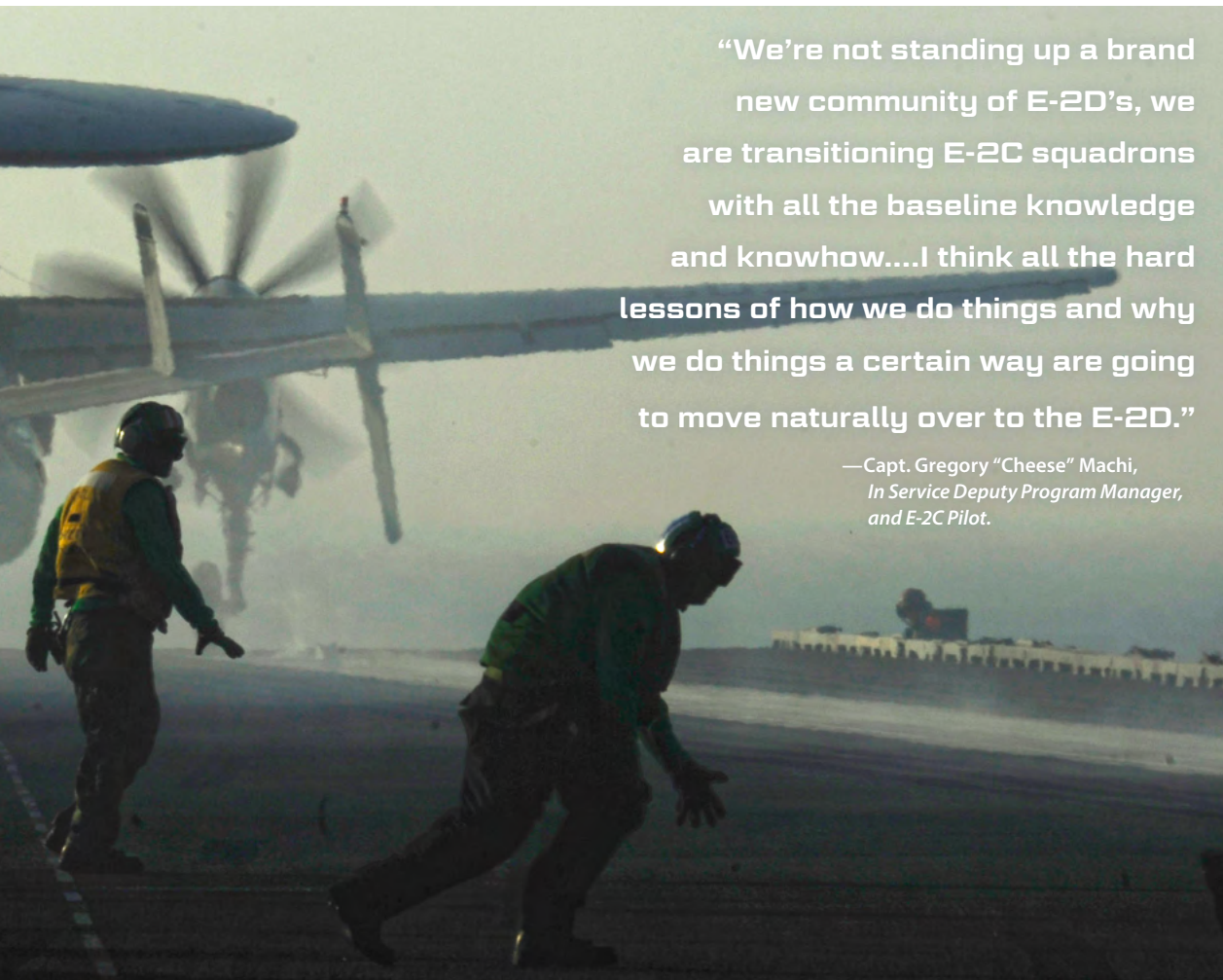
“The use of automatic identification systems was a brand new initiative with the E-2Cs and is now



U.S. Navy photo



Naval flight officers assigned to the “Sun Kings” of Carrier Airborne Early Warning Squadron (VAW) 116 conduct network and communication checks in an E-2C Hawkeye aboard the aircraft carrier USS Nimitz (CVN 68) Jan. 31, 2021.



“We’re not standing up a brand new community of E-2D’s, we are transitioning E-2C squadrons with all the baseline knowledge and knowhow....I think all the hard lessons of how we do things and why we do things a certain way are going to move naturally over to the E-2D.”

—Capt. Gregory “Cheese” Machi,
In Service Deputy Program Manager,
and E-2C Pilot.

Aviation boatswain’s mates recover after launching an E-2C Hawkeye assigned to the “Golden Hawks” of Airborne Early Warning Squadron (VAW) 112 during flight operations aboard aircraft carrier USS John C. Stennis (CVN 74) Nov. 10, 2016.



U.S. Navy photo by MC2 Greg Hall

something that most operational commanders don’t want to live without,” he said.

Currently, VAW-123 and VAW-116 are the only squadrons still operating the E-2C Hawkeye and are scheduled for transition to the E-2D Advanced Hawkeye.

The Navy has delivered 55 E-2Ds to date of the planned 78. The remaining aircraft are scheduled to be off the production line by 2026.

In the meantime, the E-2/C-2 Airborne Command & Control Systems Program Office says it is focused on hitting and sustaining Mission Capable Aircraft Required (MCAR) and Fully Mission Capable Aircraft Required (FMCAR) goals for the E-2D. These objectives keep the aircraft operational and prepared for the fight tonight. They are also looking toward the future and their advanced development program is at work to ensure the warfighter is equipped against the threats of tomorrow.

“We have begun discussions on what will replace the E-2D. Next generation command and control

is grass roots right now, but we will need a manned command and control aircraft to support the air wing of the distant future...2040s and beyond. We’re starting to pull that string,” Arrobio said.

“I think the way our community is, since we are transitioning from E-2Cs to the Ds, a lot of that knowledge is naturally going to proliferate itself to the new platform,” Machi said. “We’re not standing up a brand new community of E-2D’s, we are transitioning E-2C squadrons with all the baseline knowledge and knowhow. I think the way our community is, since we are transitioning from E-2Cs to the Ds, a lot of that knowledge is naturally going to proliferate itself to the new platform,” Machi said. “I think all the hard lessons of how we do things and why we do things a certain way are going to move naturally over to the E-2D.”

Carolyn Bauer is a communications specialist with the E-2/C-2 Airborne Command & Control Systems Program Office. Rob Perry is an editor and writer with Naval Aviation News. ✈

NAMCE Lemoore Responsible for Returning Nearly Five Squadrons' Worth of Aircraft to Fleet Since 2018

By the Naval Aviation Enterprise Communications Team

The 400 officers, Sailors and civilian contractors assigned to Naval Aviation Maintenance Center for Excellence (NAMCE) Lemoore, California, have made a critical impact to the goal of 360 mission-capable (MC) F/A-18E/F Super Hornet Navy-wide since the command's stand-up in 2018.

An F/A-18E aircraft from Naval Air Station (NAS) Lemoore from Strike Fighter Squadron (VFA) 136 "Knighthawks" flies over the Sea Test Range Range after completing a training mission.

Over the past four years, NAMCE Lemoore has provided maintenance support to the Strike Fighter community. NAMCE Lemoore has contributed to the successful return of 35 F/A-18 E/F Super Hornets to the Lemoore flight line.

Of the original 60 aircraft sent to NAMCE Lemoore in 2018 as part of the effort to reach the original goal of 341 strike-fighter jets (now 360), the final four remaining Block II Super Hornets were being returned to squadrons beginning in August and will be completed by December. Two of these aircraft were down for 10 and 16 years, requiring full rebuilds and modifications.

"After reaching our MC goal, we realized that this concept contributed to strategic depth in terms of maintenance," said Cmdr. Joseph Stierwalt, Officer in Charge, NAMCE, Lemoore.

Stierwalt said that the vision for the command has broadened to include a comprehensive mission aimed at incorporating agile processes to continue improving the health of the Lemoore flight line.

"We broadened that aperture and began working with F/A-18 & EA-18G Program Office in 2021 to start performing a maintenance reset," Stierwalt said. "We follow a 35-calendar day deep dive into an aircraft to identify and repair all corrosion and other discrepancies that are found in the F/A-18 fleet. When the aircraft leave NAMCE Lemoore, they are essentially a brand-new Super Hornet, and it leaves here with a new Hornet smell."

Lt. An Hua, NAMCE Lemoore Maintenance Officer, emphasized the command's approach to creating an effective and repeatable process for Sailors to learn and apply in their squadrons.

"If they are doing the maintenance right the first time, it will save them considerable time moving forward," he said.

NAMCE Lemoore provides two corrosion-specific courses and has provided training to over 70 maintenance technicians. The two courses include Form in

U.S. Navy photo by Lt. Cmdr. Darin Russell

Place (FIP) seal application training and a hands-on corrosion training course using aircraft brought in for maintenance reset. Corrosion training is crucial to extending the life of the aircraft. Any time a panel is removed for maintenance and improperly installed back on the aircraft after maintenance completion, it enables environmental hazards to penetrate the exposed crevices of the panel and corrode the jet from the inside. Identifying, treating and preventing corrosion is paramount.

One of the time-saving initiatives taught to Sailors will ultimately save clean-up time after they finish with corrosion restoration efforts.

“When maintenance technicians re-

move an aircraft panel for FIP repair, they are trained to place tape underneath the sill to act as a drip pan and catch any FIP residue,” said Hua, who added that this procedure will save hours of collecting debris from inside the aircraft, allowing more time to be spent on other maintenance priorities. “The Sailors who saw this specific training never thought of placing tape under the panel sill, and many have used scribes, cheese cloth and magnets to remove the smallest level of debris.”

In total, NAMCE Lemoore contributed more than 200,000 man-hours fixing, repairing and returning these aircraft, which is an equivalent of three squadrons’ worth of aircraft, to the fleet since 2018. The nature of the repairs consisted

of a multitude of discrepancies completed over the timespan of four years, resulting in the sustained support to MC aircraft.

“One of the things we found during that initial deep dive was a large number of F/A-18 E/F Super Hornets were long-term down, and unflyable for greater than 90 days due to parts issues, repair issues and in some cases, lack of manpower to complete the repairs,” Stierwalt said.

NAMCE Lemoore’s contributions to Naval Aviation readiness have exceeded expectations and requirements.

“For the past two months we have been setting records in terms of numbers of MC jets that we have brought to the Naval Aviation Enterprise,” he said. 🦅



U.S. Navy photos

AME1 David Mcmenamy trains Sailors on the proper Form In Place application.



AM1 Adam Keddington conducts Maintenance Reset corrosion treatment and prevention training with Sailors from Strike Fighter Squadron (VFA) 122.

Ship Motion Platform Brings Unique

By Adam Hochron

After five years of hard work and dedication, team members from Naval Air Warfare Center Aircraft Division Lakehurst (NAWCAD LKE) are excited to see their one-of-a-kind Ship Motion Platform (SMP) fully operational.



U.S. Navy photo

Ship Motion Platform with its UAV landing superstructure at Naval Air Warfare Center Aircraft Division Lakehurst, New Jersey.

The SMP offers the Navy and other interested parties a ship motion environment without the need for dedicated at-sea periods, thereby reducing costs while providing an opportunity to also reduce schedule and technical risks to programs. While the SMP cannot replicate every aspect of the ship-board launch and recovery environment, it can help Unmanned Air Vehicle (UAV) teams in technology maturation and risk reduction efforts.

“The ability to provide innovative tools like the Ship Motion Platform to the Navy and its partners is at the very heart of our mission here at NAWCAD Lakehurst,” said NAWCAD LKE Executive Director Kathleen P. Donnelly. “These tests show we are ready and able to do our part in this greater effort.”

The control system allows the LKE team to simulate the movement of both aircraft carriers and guided-missile destroyers in waves up to sea state 4 with wave heights between 4 to 8 feet. The SMP can replicate the pitch, roll and heave of a ship at sea and hold a static tilt as part of the testing. In addition, the SMP is rated for a payload of 100,000 pounds, although heavier loads can affect how much movement the system can handle.

The SMP, acquired in 2017 from U.S. Army Aberdeen Proving Ground, Maryland, aids in ensuring platforms that come to test encounter the sea states and ship motions necessary to achieve certain test points. For the SMP, achieving sea state 4 motion is not a matter of wind and weather, as it is at sea, said NAWCAD LKE test engineer Rob Pellegrino.

Recent UAV tests on the SMP used four CONEX boxes attached to the steel structure to replicate the deck of a ship and provide extra safety for the aircraft.

“UAVs are really going to be at the forefront of Naval technology moving forward. And what the platform does for anybody, whether it’s support equipment, an aircraft or even human interface testing, is it provides a repeatable solution or environment that you otherwise can’t get at sea,” Pellegrino said.

The SMP allows for safer testing at NAWCAD LKE’s land-based site in Lakehurst, New Jersey, rather than testing at sea.

“The argument is whether a captain wants to sail his or her ship into really rough waters to support a test. You still don’t know what you’re going to get in the variability that is the actual open ocean. So,

Testing Tool to NAWCAD Lakehurst



U.S. Navy photos



the idea that I can come and bring you a specific sea state and then repeat that sea state over and over again is something that you've never had before," Pellegrino said.

NAWCAD LKE Officer in Charge Cmdr. Walter A. Reynolds said he was thrilled to see the years of work by Pellegrino and his team pay off in a way that can benefit the fleet for years to come.

"The use of the Ship Motion Platform is just the latest example of the work done here at NAWCAD Lakehurst, aimed at offering capabilities that contribute to the success of our supported programs," Reynolds said. "Seeing the successful testing of the UAVs is a testament to the work done by Rob and his team to take a concept and make it a reality. I have no doubt that, if utilized, test events here will positively impact programs in areas of schedule and cost savings while allowing them to test, mature technology and then test again at a pace we need to make that the norm."

After five years of development, Pellegrino said he believes the recent tests are just the beginning as word spreads about its benefits.

"The Ship Motion Platform has a small, close-knit team that has really pushed themselves to continually improve the site and its capabilities," Pellegrino said. "The site's success is a testament to the team's work ethic while their ability to accommodate ever-evolving test objectives is what will spotlight the platform and its capability."

An unmanned aerial vehicle approaches and lands on the Ship Motion Platform at Naval Air Warfare Center Aircraft Division Lakehurst, New Jersey.



As more is learned about the SMP and its capabilities, the team is excited to welcome new partners to the facility and see what other benefits the system can have for both the Navy and the companies that help it fulfill its mission-critical objectives.

"The point of bringing an aircraft in is I want them to test, and I realize they may not be ready for shipboard testing. So, the ability to provide them with a safe and controlled environment is a capability we've never had before. This lets them develop and learn without risk to operational Navy equipment," Pellegrino said.

Adam Hochron is a communications specialist with Naval Air Warfare Center Aircraft Division, Lakehurst, New Jersey. 🦅

Team Investment Saves CH-53K Program Schedule, Strengthens Small Business

By Victoria Falcón

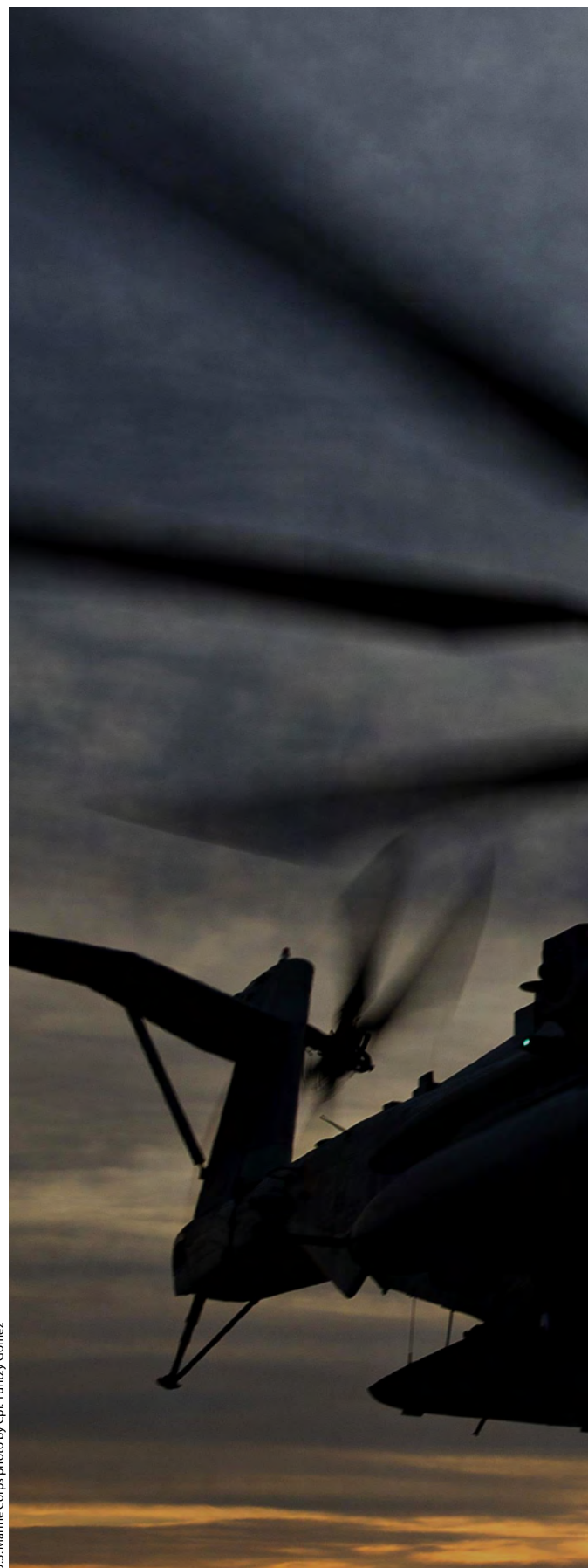
Ingenuity, oversight and a capital investment by the production department for Naval Air Systems Command's Heavy Lift Helicopter Program Office helped transform a struggling U.S. manufacturer into a modern, dependable production source for aircraft fuel cells and avoided the potential failure of a critical Department of Defense (DOD) supplier.

The team's actions also eliminated persistent schedule delays for the Marine Corp's brand-new heavy lift helicopter, the CH-53K King Stallion.

Amfuel is a small business in rural Arkansas that manufactures self-sealing fuel cells for the CH-53K and 26 other DOD aviation platforms. A fuel cell is a rubber ballistic fuel bladder that adheres to the inside of the aircraft's fuel compartment and can self-seal in case of puncture by gunfire during a firefight. Amfuel is one of three DOD critical suppliers who produce these type of fuel cells. It is the only critical DOD supplier with the intellectual property to produce the CH-53K fuel cells and one of only two suppliers with that capability. The production shutdown of any of these critical suppliers would threaten the well-being and stability of the DOD industrial base to meet national security threats.

In 2020, Amfuel had recently emerged from bankruptcy and was on the brink of leaving the industrial base. It was a company under new ownership and dealing with the trials of a pandemic. The company faced challenges with failing or dead equipment, quality control issues, and meeting production rate needs of the CH-53K due to World War II-era aviation manufacturing equipment, processes and infrastructure.

"It was not hard for the team and senior leadership to realize the criticality of sustaining this DOD supplier that manufactures a very specialized product for U.S. military aviation," said William Winters, co-lead of the production integrated product team for the program office. "The team applied critical-thought and outside-the-box thinking to evaluate tooling-equipment requirements needed."



U.S. Marine Corps photo by Cpl. Yuritzy Gomez



The CH-53K will replace the CH-53E "Super Stallion," which has served the Marine Corps for 40 years, and will transport Marines, heavy equipment and supplies during ship-to-shore movement in support of amphibious assault and subsequent operations ashore.

According to Winters, the production team then developed a rapid acquisition strategy to procure the items as government furnished property. This effort was to safeguard the production of CH-53K fuel cells and sustain production of this DOD aviation-critical component.

Amfuel's new owners made significant investments in basic elements to keep the business operational, such as raw materials and labor. But additional help was needed quickly to refurbish Amfuel's antiquated facilities and acquire needed equipment to sustain production rates required to meet existing DOD demand.

“It is not an overstatement to say that without the expedited effort of our team, the CH-53K would have had a production gap and/or complete loss of a DOD critical supplier due to infrastructure collapse during the 2020 snowstorm.”

funding to partial roof replacement, which became a significant investment as the company faced a hurricane, a tropical storm and a 2-foot snowfall within six months of repair. In areas where funding was unavailable for repair, Amfuel experienced roof collapse from the snowstorm.

“It is not an overstatement to say that without the expedited effort of our team, the CH-53K would have had a production gap and/or complete loss of a DOD critical supplier due to infrastructure collapse during the 2020 snowstorm,” Winters said.

A multi-disciplinary government team, along with Amfuel, oversaw the design, procurement, production and installation of the new equipment. That oversight included supplier site visits to assess manufacturing capability, planning and ability to meet government requirements as Amfuel gained more solid footing on the path to recovery.

To safeguard against a shutdown by Amfuel and to ensure a strong U.S. industrial base for this critical component, the program office's production department implemented a rapid acquisition strategy to procure 18 pieces of equipment to facilitate modernization of the Amfuel manufacturing process. That equipment included both large and small autoclaves, a robotic spray system, automated control of machining tools, ovens, coordinate-measuring machines and research-development lab equipment.

Amfuel was also able to divert some additional



During the first year following these capital investments, Amfuel more than tripled production.

“Amfuel is currently a sole-source supplier for CH-53K fuel cells,” Winters said. “Prior to these investments, they were producing one fuel cell shipset (four bags) per month for our aircraft, and experiencing quality issues. Now they are making six fuel cell shipsets per month. More important, the multi-disciplinary government team has positioned this critical supplier to have the manufacturing capability and processes in place to support full-rate production of the CH-53K aircraft.”

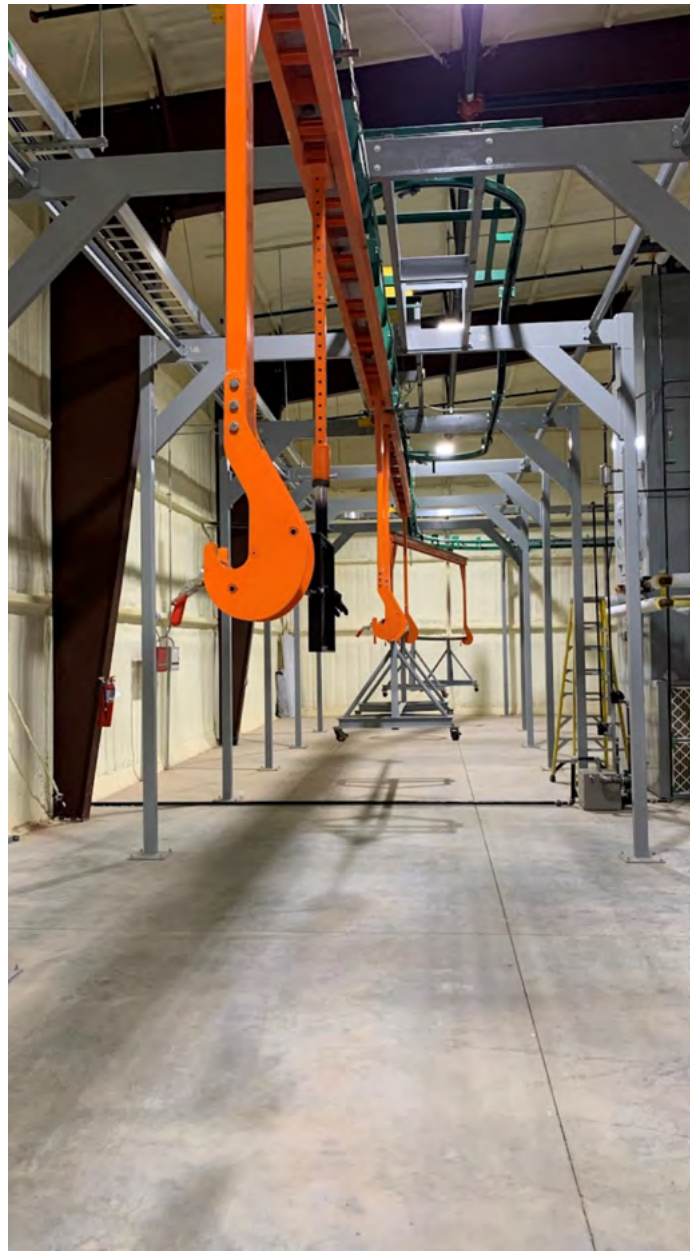
Another positive impact from the new tooling equipment is the reduction of defects found in the bags.

“By focusing our energy on assisting Amfuel, defects in CH-53K fuel bags have been reduced from an average of 475 in 2021 to under 200 in 2022, a 58 percent reduction that continues to trend down-



Photos courtesy of Amfuel

An Amfuel employee stands inside the new large autoclave purchased as Government Furnished Equipment and used in the production of CH-53K fuel cells.



The overhead conveyor system used for the new Robotic Spray Facility purchased as Government Furnished Equipment and used in the production of CH-53K fuel cells.

ward,” Winters said. A defective fuel bag is unusable by the government and must be either reworked or scrapped. “To date, Amfuel has shipped 42 bags through the new production system and not one of them has had a defect.”

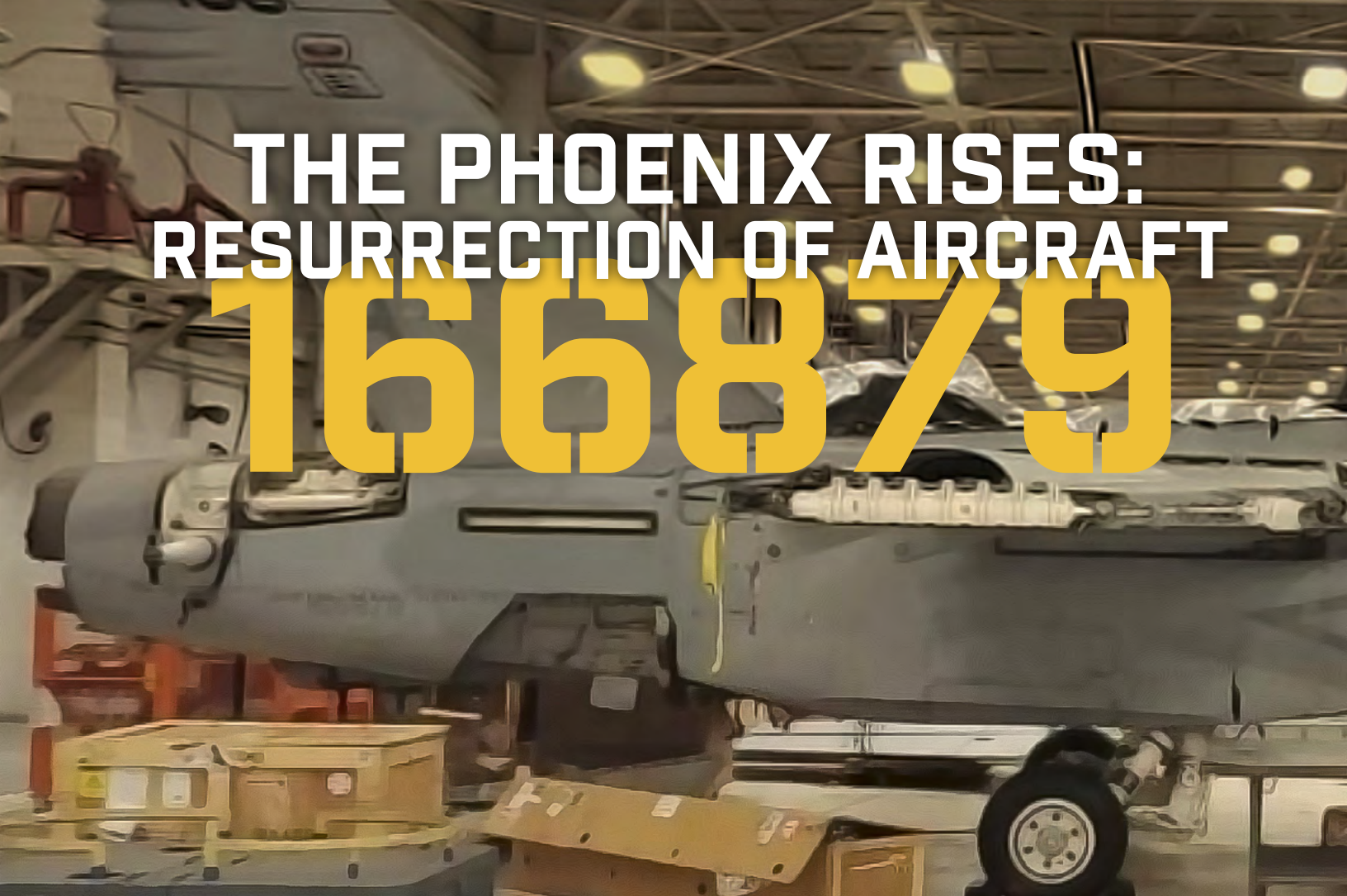
According to Amfuel representatives, the improvements have prevented more than \$1 million in potentially scrapped fuel cells.

Additionally, the company was eventually able to obtain Defense Production Act Title III funds for new infrastructure and structural repair. Title III funds are used for strategic and critical materials necessary for timely availability of essential domestic industrial resources to support national defense and homeland security requirements.

“Our investment of people, time and money into this critical DOD supplier has provided stability into this sector of the industrial base,” Winters said. “We were able to expedite the installation and operational availability of the new tooling and equipment to quickly improve production efficiencies and reduce quality control issues.”

The timely actions of the production team have helped to sustain a critical DOD aviation fuel cell supplier for both the CH-53K and 26 other DOD aviation platforms as the U.S. continues to face ever-growing global threats.

Victoria Falcón supports strategic communications for the H-53 Heavy Lift Helicopters Program Office. 🇺🇸



THE PHOENIX RISES: RESURRECTION OF AIRCRAFT 166879

By Lt. Cmdr. Mark J. Van Orden Jr.

In the waning sunlight of April 2, Victory 205 took off on a Functional Check Flight (FCF) Profile A—the last step in the arduous maintenance journey before being deemed airworthy. The growl of the afterburners and retraction of the landing gear was met with cheers, high-fives and jubilation from the 15 dedicated maintainers on the flight line. To many, this may have seemed like a normal F/A-18 takeoff from Naval Air Station (NAS) Oceana, Florida; however, this was the first flight of aircraft 166879 (Side 205) since May 4, 2012.

Strike Fighter Squadron (VFA) 103 had accomplished something no other fleet squadron had in recent memory—resurrecting an aircraft to Mission Capable (MC) status after nearly 10 years of not flying. All the Sailors in the command accomplished this herculean task through an incredible sense of pride, ownership and dedication.

The history of aircraft 166879 is somewhat murky. Its last flight was May 4, 2012, at NAS Lemoore, California, with VFA-154. The aircraft was rumored

to have experienced a brake fire, which caused a significant amount of damage.

After that incident, the aircraft was thought to be stricken from the inventory record and transferred to VFA-122. While at VFA-122, it was used as a parts bird and “Hangar Queen,” and robbed of parts to such an extent it was barely recognizable as an aircraft. Unfortunately, some of the cannibalization was either not properly documented, or lost over time. Sometime in 2017, the aircraft was transferred to VFA-106 where the logset—the entire

maintenance record—was maintained, but the aircraft was essentially under the ownership of Command Strike Fighter Wing Atlantic (CSFWL), and subsequently Naval Aviation Maintenance Center for Excellence (NAMCE) Oceana.

Aircraft 166879 remained out of reporting in CSFWL’s inventory from 2017 until it was transferred to VFA-103 in 2021. As the fleet began to work towards its MC Super Hornet target, 166879 was deemed a “non-workhorse” asset, meaning it would only be used to fix other aircraft. Once VFA-103 achieved its MC target, the “non-workhorse” title was dropped and the aircraft was parked at Oceana with zero maintenance attention. The aircraft might have stayed in this state except for an increasing need for airworthy Hornets.

The Naval Aviation Enterprise (NAE) faces a difficult F/A-18F availability problem. With Boeing no longer producing F/A-18F models, Service Life Manage-



Aircraft 166879 upon arrival at VFA-103's hangar, at Naval Air Station Oceana, Virginia.

U.S. Navy photo courtesy of VFA-103

ment (SLM)/high flight-hour restrictions, and a high demand of two-seat models at each Fleet Replacement Squadron (FRS), F squadrons in maintenance phase find themselves in a precarious jet availability situation.

Balancing all of the abovementioned difficulties, aircraft 166879 was identified as a potential flyer for two reasons. First, the aircraft had not flown in almost 10 years, and as a result, the airframe had less than 1,000 hours. Second, it had an AESA Radar already installed. VFA-103 was selected as the squadron to resurrect 166879 with the help of Fleet Readiness Center Mid Atlantic (FRCMA) due to its extended maintenance phase, allowing plenty of time to accomplish the impossible.

On Jan. 11, 2021, the aircraft arrived to VFA-103's hangar on a flatbed truck. The wings were missing, the canopy was gone, some flight controls were completely missing, panels were stripped, fuel cells

were not even installed, and one could look through the belly of the aircraft in the avionics bays. In fact, the lieutenant's name painted on the side of the aircraft was about to become an executive officer.

After the initial sticker shock, VFA-103's maintenance team began work. 205 was slated to go to Periodic Maintenance Interval (PMI), but before it could go there, depot level maintenance needed to be accomplished before the PMI team could begin. The initial months of maintenance involved simply getting this ghost of a plane to resemble a Super Hornet.

Dec. 14, 2021, marked a huge milestone for 205. Even without a canopy installed, an In Flight Refueling (IFR) Probe that refused to close and several panels still missing, maintenance personnel conducted the first ground turn of the aircraft. The aircraft was started via a huffer—an external air cart used to push air into the engine to assist with starting—and only the right

engine was started. VFA-103 was one step closer to getting 205 back in the air.

On Dec. 29, 2021, VFA-103 welcomed 205 back into their hangar. This move proved critical to the final phases of reconstruction. Work could now be done in the home hangar, which removed any sort of transit time across the flight line and now allowed more chief or officer oversight. During the Christmas and New Year leave periods, VFA-103 identified March 15, 2022, to be the initial flight of aircraft 205. The Ides of March seemed poetic as in ancient Roman times, that day was the one when Romans would pay off their debts. As such, VFA-103 would pay off the immeasurable debt incurred by the entire NAE and get 205 airborne.

During the first months of 2022, constant but slow progress was made on the aircraft. The biggest issue during this phase was that all work seemed to be one step forward and two steps back. In

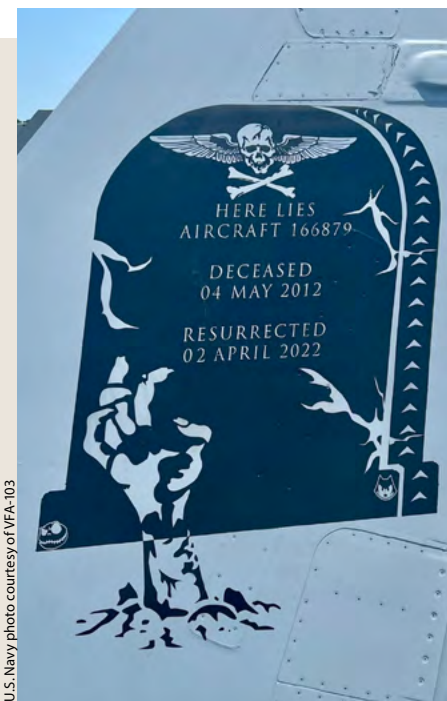
addressing and fixing one critical component, unexpectedly, a different component would fail. Rework became the enemy to progress.

Being that the aircraft had been cannibalized for so long, some parts or components that even experienced chiefs had never seen removed from the airframe were missing. With a significant lack of prior documentation, it was challenging to figure out which parts were missing. This required extensive depot level work to overcome these challenges.

During February and the beginning of March, the majority of VFA-103 was aboard USS George H.W. Bush (CVN 77) for Tailored Ships Training Availability (TSTA)/Group Sail. A dedicated team of 38 maintainers stayed back to focus their work solely on the resurrection of 205. With the proposed March 15 fly date rapidly approaching upon return from TSTA, it became evident that the aircraft was still a long way from its first flight.

The Nosewheel Digital Display Indicator proved to be an interesting problem. It would show completely different maintenance status panel codes than would show in the cockpit on the Engine Fuel Display (EFD) and the Maintenance Card post flight. Replacing it did not work initially, but once the correct software version was installed, the issue was solved. However, this small issue highlighted a general trend with 205; what seemed like a simple fix was anything but that. Outwardly simple fixes turned into days-long wild goose chases that dramatically increased the maintenance hours dedicated to 205. Messaging these setbacks and complications to higher headquarters proved difficult. The daily progress report generated by the VFA-103 Maintenance Material Control Officer (MMCO) showed that the required work should only take a certain number of maintenance hours. The actual work required was often double the estimated time due to the complications described above.

After TSTA, VFA-103 dedicated a team



The current design on 205's inboard vertical stab commemorating the accomplishment of bringing the aircraft back into service.

of 15 maintainers, under the leadership of a highly competent chief, to devote all time and energy into getting 205 in the air. Some of the squadron's most knowledgeable maintainers were removed from their work centers to focus on 205.

While a massive amount of work was being done to the aircraft, Aviation Maintenance Administrationmen (AZs) were doing more work behind the scenes. They are the true unsung heroes of the resurrection of 205. With a lack of documentation for nearly a decade, logbooks had to be rebuilt from scratch and electronically in Optimized Organizational Maintenance Activity (OOMA) as well. Additionally, while a lot of the cannibalization was undocumented, there were still over 1,000 cannibalization Maintenance Action Forms (MAFs) that the AZs had to clear. Without any of the workers who cannibalized the parts in the squadron, the AZs were forced to conduct extensive research in order to sign off these MAFs. The administrative burden to get aircraft 166879 airborne was in many ways more difficult than the wrenches being turned on the aircraft.

With rebuilt logsets, 205 was screened for all Technical Directives (TDs) that it had missed in the past decade. The 500C TD verification could not be done before the logsets were complete. Once the TD screening began, VFA-103 identified 176 TDs that needed to be complied with before the aircraft could be released safe for flight.

By March 24, 317 total MAFs remained of which 213 were down MAFs, preventing it from being safe for flight. Some of the most stubborn gripes in the workload included re-rigging the in-flight refueling probe multiple times and swinging the landing gear.

On March 31, VFA-103 left its home base for training at Air Wing Fallon, Nevada. Only the 205 build team remained in Oceana. At this time, 133 MAFs remained, 63 of which were down. With the landing gear issue fixed, the airframers needed to re-rig the IFR probe—it took almost an entire day to get the probe re-rigged so that it would close properly.

On the morning of April 2, a palpable excitement was in the air: 205 was hours away from its first flight. The jet still needed to go to the compass rose, but the "Ladder" caution would not go away. Once the airframers completely re-rigged yet another component, 205 finished compass calibration and was almost ready for flight. After the compass calibration, paperwork was completed in preparation for the functional check flight (FCF) brief. Finally, for the first time in almost 10 years, 205 was released Safe-for-Flight by AMC Shinn. AD3 Neyman signed as Plane Captain (PC) and currently has a framed copy of the A-Sheet at his house.

Racing against the remaining sunlight in the day, the FCF brief was complete and aircrew walked on 205 for the first time in a decade. During the ground turn portion of the FCF, only a few issues arose. The ECS scoop was not closing properly, but AM2 Douglas Mignone was able to troubleshoot it on the go. The maintenance card did not load properly but AZ2



Members of the 205 build team pose with the functional check flight aircrew, celebrating the aircraft's first flight.

Brianna Wancowicz ran back to the hangar to reformat it. All in all, the ground turn went exceptionally smooth for an aircraft which had not flown in 10 years.

At 6:12 p.m., aircraft 166879 accelerated down the runway and once again tasted flight. The airborne portion of the FCF went smoothly, and 205 landed with the Profile A complete. Upon shutdown, a jittery Heads Up Display (HUD) and some Nose Wheel Steering (NWS) Hi-Gain Bit Logic Inspection codes (BLINs) were the only issues noted by aircrew.

The fact that aircraft 166879 passed the Pro-A on its very first attempt with almost zero gripes is a testament to the professionalism and pride of the maintainers of VFA-103. Furthermore, it is a testament to all those who helped facilitate its resurrection. While the 15 build team members were individually honored for their work and dedication, the entire squadron deserves credit for

successfully flying 205. The rest of the squadron still maintained 11 up aircraft and supported four detachments while 205 was being rebuilt.

"It took hard work from every person to get this bird in the air," Mignone said. "Not only did this bird fly, but its second flight was cross-country from Virginia Beach to Fallon Nevada. I'm extremely proud of my contribution to this jet's continued success, and it's probably my biggest accomplishment in my naval career to date."

"The amount of work and time put in to making this happen and to watch first flight from take-off to land with no issues speaks to the hard work of the 205 crew and was the most amazing thing to see it take its first flight. This crew stepped up and made what was thought to be impossible a reality," said LS3 Dan Dunagan.

On a larger scale, the entire flight line deserves praise for helping VFA-

103 accomplish this herculean task.

First and foremost, a huge thank you to VFA-32 for providing extra maintenance personnel and countless man hours, as well as shared maintenance expertise to troubleshoot gripes. Another thank you to the Maintenance Team at CSFWL for their guidance and unwavering support throughout the process.

With all the lessons learned, we must not forget one simple fact; this was accomplished via the consummate pride and professionalism of our most important asset: our Sailors. Their dedication and willingness to sacrifice above and beyond the call of duty is the only reason aircraft 166879 flew again. It was through their sacrifice that VFA-103 was able to add yet another legendary chapter to their already storied history.

Lt. Cmdr. Mark J. Van Orden Jr. is the Maintenance Officer with Strike Fighter Squadron 103. 🇺🇸

Members of the 205 Build Team

AMC Joshua Shinn
AD1 Richard Ferguson
AD1 Joshua Briggs
AM1 Todd Estes

AM2 Douglas Mignone
AE2 Sean Murphy
AME2 Trenton Canfield
AZ2 Brianna Wancowicz

AT2 Christopher King
AT3 Caleb Wetzel
AME3 Donald Whitaker
AE3 Carlos Karg

AD3 Jack Neyman
AME3 Wenguang Wang
LS3 Dan Dunagan

50th CH-53E Super Stallion Completes **RESET**

By Victoria Falcón

The 50th CH-53E Super Stallion aircraft recently completed an extensive maintenance process, known as RESET. The program achieved its “golden” milestone in September with the completion and delivery of the aircraft back to Marine Heavy Helicopter Squadron (HMH) 466, at Marine Corps Air Station Miramar, California.

R ESET is an intensive period of dedicated maintenance for the CH-53E that re-baselines all squadron-level inspections; replaces high-time components; and delivers a leak-free, Full Mission Capable (FMC) aircraft with zero awaiting-maintenance discrepancies back to the warfighter.

The CH-53E helicopter is mainly used for heavy-lift cargo and can lift every Marine aircraft except the KC-130. It has been a powerful workhorse for military operations for more than 30 years. RESET is vital to sustain this aging fleet until the transition to the new heavy lift helicopter, the CH-53K King Stallion, is complete. The first CH-53K squadron, HMH- 461 has already been established in New River, North Carolina.

Since the program’s inception in 2016, RESET aircraft have produced a solid return on investment to the fleet Marine forces by requiring decreased maintenance man hours per flight hour; a reduction in cost per flight hour; increased monthly utilization; a stimulated and more responsive supply chain; and most notably, greatly contributed to a higher overall state of readiness for the entire CH-53E fleet.

To date, these 50 aircraft have amassed 37,173 flight hours in the fleet. With two additional aircraft in RESET final delivery, and another eight aircraft in-process, the program continues to produce FMC, turn-key assets to support the heavy lift needs of the U.S. Marine Corps.

Victoria Falcón supports strategic communications for the H-53 Heavy Lift Helicopters Program Office. 🦁



U.S. Marine Corps Photo

The interior of the 50th CH-53E following RESET, an extensive maintenance process for the aging Super Stallion heavy lift helicopters.





The 50th CH-53E to go through RESET was delivered back to Marine Heavy Helicopter Squadron (HMH) 466 as a Full Mission Capable, turnkey asset following RESET.

FRCE's H-53 Military Branch Keeps the Fleet Ready to Fight



U.S. Navy photo

A recently overhauled CH-53 helicopter flies out of Marine Corps Air Station Cherry Point, North Carolina. The aircrew consists of Marines from Fleet Readiness Center East's (FRCE) H-53 Military Branch.

The CH-53 Sea Stallion and MH-53 Sea Dragon helicopters have been mainstays of the Navy and Marine Corps for decades. On any day, these heavy lift helicopters can be seen around the world performing a wide variety of critical missions.

Fleet Readiness Center East (FRCE) ensures squadrons in the Navy and Marine Corps are equipped with combat-ready helicopters by providing maintenance, overhaul and repair services for the platform. To do this, FRCE employs a workforce of highly skilled civilian aviation maintenance professionals who perform this often complex work. Working alongside these artisans is a small group of Marines who make up FRCE's H-53 Military Branch. These four Marines fill a critical need in ensuring fleet aviators have what they need, when they need it.

"That may not be a large group, but they play an outsized and pivotal role here at the depot," said FRCE Commanding Officer Capt. James Belmont. "The CH-53 and MH-53 helicopters are workhorses of the fleet and these Marines are instrumental in getting these aircraft out of the depot and back into the hands of the warfighter."

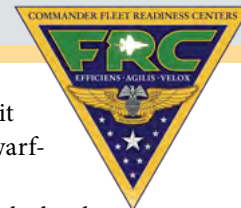
FRCE's H-53 Military Branch consists of two pilots and two crew chiefs, who work with the aircraft from the time FRCE inducts it for service until they fly it back to the fleet.

The squadrons expect to receive a capable aircraft that is ready for immediate use, said Capt. Ryan Boyer, FRCE's H-53 Military Branch head and CH-53 pilot. Boyer flew CH-53s with Marine Heavy Helicopter Squadron (HMH) 462 and while deployed as part of the Unit Deployment Program prior to his assignment to FRCE. He has first-hand knowledge of the importance of flight line readiness.

"Some of these aircraft are heading straight out to units that are going on Marine Expeditionary Units and deploying," Boyer said. "Other squadrons need aircraft that they can fly and train on, so we need to be able to provide a safe aircraft that are mission-ready."

In order to provide the fleet with quality and capable aircraft, FRCE's H-53 Military Branch oversees a variety of critical functions, including inspections and safety checks conducted during each phase of the maintenance, overhaul and repair process, and ensuring artisans obtain and maintain necessary certifications and qualifications.

"There is no check or process that we take a shortcut with



at the depot,” said Staff Sgt. Matthew Hotelling, FRCE’s H-53 Military Branch deputy and CH-53 crew chief. “Every single process has to be exactly by the book to ensure that we are giving the squadron the best, safest and most capable aircraft. Throughout all phases of the process, we’re out checking the aircraft. We go in and talk to the artisans and before it is allowed to come out to the line, we have to go out there and essentially look over the entire aircraft.”

Hotelling, whose past assignments include deployments throughout U.S. Indo-Pacific Command, said delivering a capable, combat-ready aircraft to the fleet drives the team at FRCE. Drawing on his own experience in the squadrons, he said mission readiness in the fleet relies on aircraft the squadrons can depend on.

“Out in the fleet, the Marines and Sailors are expecting a quality product from us,” Hotelling said. “We have to give them a quality product they can trust. They can do their inspections, take it on the boat, and go wherever they need to go with total

confidence that it is going to perform as we say it will. Providing a safe, effective aircraft for the warfighter is what it all really boils down to.”

In the course of their duties, the Marines work closely with the depot’s civilian artisans. For Cpl. Devon Schoff, a CH-53 crew chief at FRCE, this was the first time he had worked with such a large number of civilians.

“Working with so many civilians was a bit strange at first,” Schoff said. “I worked with a handful at my last squadron, so I had some experience working around civilians and contractors, but not on this scale. Here at FRCE, it’s roughly 30 Marines to 4,000 civilians.”

Although civilian employees far outnumber FRCE’s uniformed personnel, many are no stranger to the military. Hotelling said FRCE’s workforce includes a large number of military veterans, many of whom worked on the same aircraft during their time in uniform.

“Something like 40 percent of the artisans we employ are



U.S. Navy photos

Fleet Readiness Center East (FRCE) H-53 Military Branch head and CH-53 pilot Capt. Ryan Boyer, left, and Aaron Bennett, an aircraft examiner at FRCE, conduct a flight control inspection on a tail pylon for a CH-53 helicopter.



Maj. Brittany Fayos, Rotary Wing Division deputy and CH-53 pilot at Fleet Readiness Center East (FRCE), conducts a functional check flight inspection prior to the delivery of a recently overhauled CH-53 helicopter to the fleet.



Cpl. Devon Schoff, a CH-53 crew chief at Fleet Readiness Center East (FRCE), signals to the pilot as the aircrew prepares to return a recently overhauled CH-53 helicopter to the fleet.

former military,” Hotelling said. “They bring to the table this wide range of experience. We have people here with 30, 40 and even 50 years of experience working on a specific aircraft platform.”

Boyer said working closely with this highly skilled and dedicated workforce makes the often-complicated process of getting an aircraft out to the fleet easier.

“There’s so much expertise here and there’s so many different people that are all willing to help you,” said Boyer. “I’m only a phone call or two away from an engine, components or manufacturing expert, and getting any answers that I need.”

This close collaboration between the Marines and their civilian colleagues is essential when solving issues that can arise when working on the aircraft. Hotelling said working on the helicopters can be demanding, as no two are alike.

“These aircraft can be finicky,” Hotelling said. “Each one has its own unique issue that we have to work around. Figuring out that solution with the

FRCE Artisans Earn Kudos for Repairing Damaged Vintage Aircraft

A pair of Fleet Readiness Center East (FRCE) artisans recently got a chance to step back in time while doing a good deed for the community.

Robert Waits and Thomas McKeel worked together for about a dozen years as sheet metal mechanics on the CH-46 helicopter line at FRCE, which ceased operations in 2012. When the two friends were asked to repair damage to the HH-46D “Pedro” search and rescue helicopter that serves as a local landmark in Havelock, they jumped at the chance.

The damaged H-46 helicopter is one of three vintage aircraft on permanent display in front of the Havelock Tourist and Event Center, along with an RF-4B Phantom II and an A-4M Skyhawk. Two windows on the helicopter were broken and a third was cracked in a case of suspected vandalism. McKeel, now a sheet metal mechanic on FRCE’s H-53 line, said his supervisor approached him about repairing the windows on the Vietnam-

era aircraft, and he asked his friend Waits, now working in the Security Department as the FRCE locksmith, if he would be interested in working on the project together.

“I told my supervisors that this was a sentimental project for me because it’s an aircraft I enjoyed working on that’s not around anymore,” Waits said. “I expressed my interest in doing this service for the community, and they gave me the go-ahead.”

The pair said they replaced the two broken windows and repaired the crack in the third in less than two hours—far less time than the job was predicted to take. McKeel said it was a credit to their experience that they were able to complete the job so quickly.

“The first time we did that repair, you would spend all day trying to get that

one window in place with the proper tooling, which we didn’t have since the platform has gone away,” McKeel said. “It’s one of those things that you had to do more than one time, many times, to get good at it. And we did it for many years.”

McKeel and Waits may have made quick work of the repair job, but they have earned the appreciation of the local community for bringing a local landmark back to its restored condition. Havelock City Manager Chris McGee said FRCE’s efforts to quickly repair the damaged aircraft demonstrates that the facility is a good neighbor in the Havelock community.

“The aircraft that we have on display are on loan to the city of Havelock, but they are a huge part of our community and our identity as home to Marine Corps Air Station Cherry Point,” McGee said. “We don’t budget to do



artisans and with the pilots can be extremely challenging, but it's also the most rewarding aspect of the job."

Another function of the Marines working in the H-53 program is to serve as advocates for the fleet, Boyer added.

"We are the fleet's voice within FRCE," Boyer said. "FRCE is a huge machine. These artisans get the aircraft, break them down, repair them and put them all back together. Throughout that entire process, we're here to make sure that the things that need to get fixed for the fleet are getting fixed, and that we're communicating with the fleet."

Once maintenance, repair and overhaul processes are complete, and all necessary checks and inspections have been conducted, the final step for FRCE's H-53 Military Branch is the delivery of the aircraft to the squadron. The aircraft is towed to the flight line, where the H-53 Military Branch works side by side with FRCE civilian artisans to conduct a functional check flight. This determines whether an aircraft airframe, engine or engines, accessories, or equipment is functioning

according to established standards while the aircraft operates in its intended environment

After the functional check flight is completed, Boyer and Maj. Brittany Fayos, FRCE's Rotary Wing Division deputy and a CH-53 pilot, will fly the aircraft to its squadron, with crew chiefs Hotelling and Schoff aboard.

The CH-53 and MH-53 helicopters leaving the depot go to both Navy and Marine Corps units in the eastern half of the United States, where pilots will fly them on missions ranging from training flights to real world operations. According to Schoff, supporting the fleet on this scale is what makes an assignment to FRCE unique for Marines.

"I think our mission at FRCE is special," Schoff said. "There's nothing else like it. In the squadrons, the mission is to get flights out, train new people and be ready to fight. Our mission as Marines here is to make sure the fleet has the aircraft to complete their warfighting mission. I feel that being here, I'm able to support all my brothers and sisters in uniform." 🦅



U.S. Navy photo

An HH-46 Pedro search and rescue helicopter on display after two Fleet Readiness Center East (FRCE) artisans repaired damaged windows on the Havelock, North Carolina landmark.

regular repairs on the display aircraft, so from a citizen's standpoint this has a huge impact for FRC East to step up to the plate, provide the parts and repair this aircraft for us. The amazing people at FRC East do this kind of work every day, and we are very appreciative of their efforts on behalf of the city."

FRCE Commanding Officer Capt. James Belmont honored the two artisans by presenting each of them with one of his personal coins.

"At the end of the day, you just polished FRCE's reputation with the community. They know if something goes wrong, they can call on us at a moment's notice," Belmont told Waits and McKeel. "You guys did the job quickly and well, and had fun doing it. You made us all look good, and I applaud your efforts."

McKeel and Waits agreed that they would gladly take on another aircraft restoration project if the opportunity

arises, especially if they could tackle the project as a team.

"Not everybody can relive their history, but this was really fun," Waits said. "To go in there and experience something we haven't done in so many years, and it's supporting FRCE, that's just a plus."

"I would do it all over again. I just love that aircraft," McKeel said. "The H-46 line was one big family. It was a privilege, and a lot of fun, to be able to work on that aircraft again." 🦅

Professional Reading

By Cmdr. Peter Mersky, USNR (Ret.)



The Aircraft Carrier Hiryu

By Stefan Draminski, Osprey Publishing, UK. 2022. 336 pp. Ill.

I may be prejudiced, but this medium-format, very-well illustrated volume is one of the most unusual books I have seen in some time. It is the latest title in Osprey's "Anatomy of the Ship"

the carriers before the war, either during construction or during initial tests at sea.

In this case, the illustrations are not only photographs, but also a surprising number of highly-detailed renderings not only of the overall ship, but also unusually focused parts of the carrier outside and inside, as well as the various aircraft, e.g., Zero, Val and Kate in their relative positions aboard the ship both on the flight deck and below. Single drawings of often esoteric parts of the ship as well as such things as lifeboats definitely are a modeler's dream, although I don't know of any scale models available of this or, frankly, most other Japanese ships. Those

series and is worth every penny of its price. Photographs of Japanese aircraft carriers are relatively rare, especially during actual operations in World War II. Most of the photos available show

This view of the Hiryu at anchor at the Yokosuka Naval Arsenal on July 5, 1939, shows the new carrier during its commissioning ceremony. Note the island is on the port side as opposed to carriers of other countries, which place it on the starboard side.

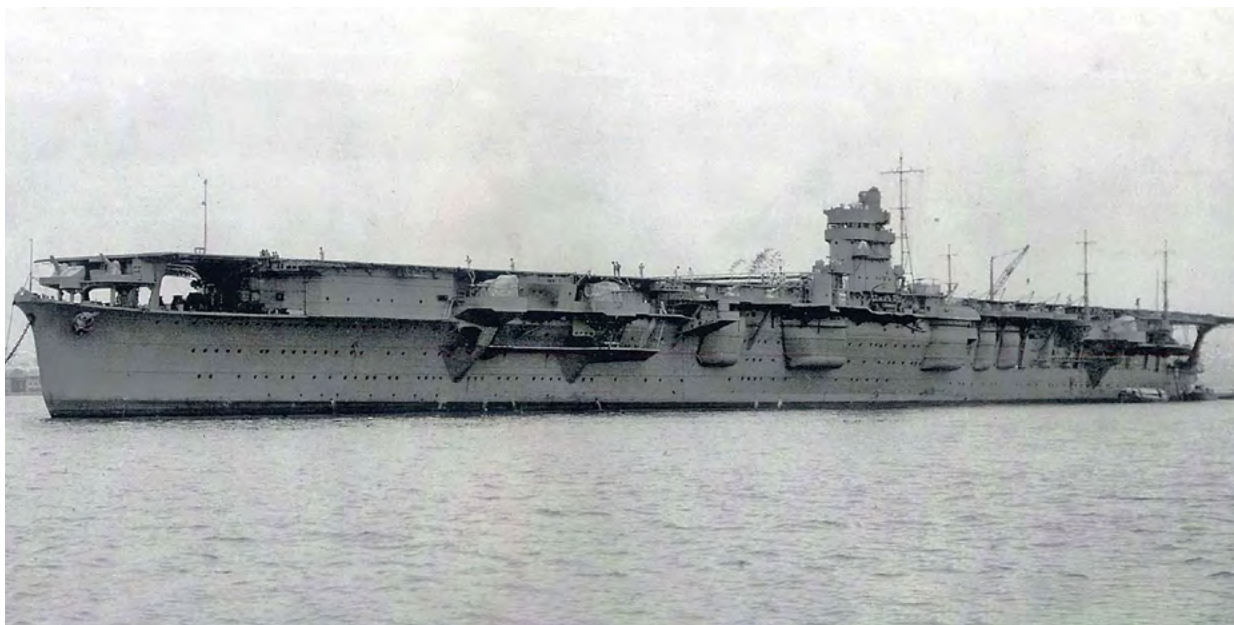


Photo courtesy of Wikipedia Commons

A drawing by the author shows the flight deck of the Hiryu with its aircraft constituting the first wave of the attack on Pearl Harbor on Dec. 7, 1941.



Illustration by Stefan Draminski

skilled modelers who specialize in scratch-built replicas should have a ball over what would sure to be at least a five-year project. Surprisingly and perhaps sadly, there is no index, which reduces the book's value somewhat as a reference tool.

As most WWII historians would know, the Hiryu was one of four Japanese fleet carriers sunk in the Battle of Midway in June 1942 in what many claim—with some justification—was the pivotal turning point in the naval war in the Pacific. Many aircraft as well as their highly trained and combat-experienced crews were lost in this engagement that took place during a spread of four (June 4-7) action-filled days that at the time left both sides unsure of the overall outcome and effect of the future prosecution of the war. After Midway, the Japanese scrambled to replace the valuable men as well as their planes and carriers (which they never did), while the Allies, particularly the U.S., were on their

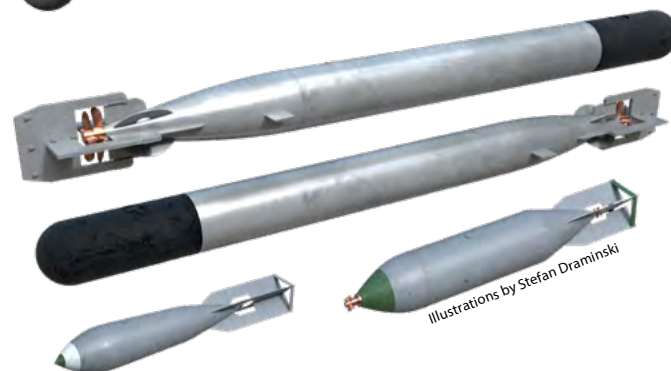
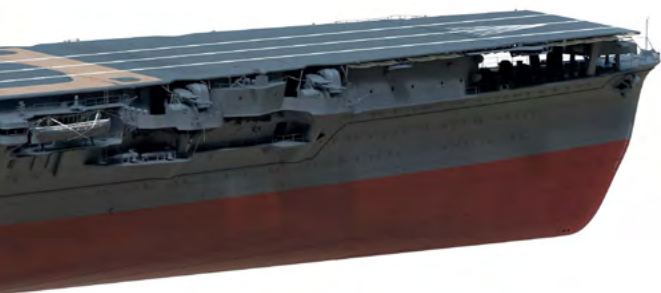


Photo courtesy of Wikipedia Commons

A Yokosuka B3Y1 Type 92 Carrier Attack Aircraft comes aboard the carrier Soryu, which was sunk during the Battle of Midway in June 1942. The Imperial Navy had a stable of biplanes that served in the between-war period, including the war with China in the late 1930s, giving experience for the war with the western powers in WWII.



At sea in late November 1941, headed toward Pearl Harbor, this photo taken from the carrier Zuikaku shows details also found on the Hiryu, including 12.7cm gun mounts. The carrier in the background is the Kaga.



Illustrations by Stefan Draminski

Shown sporting its color scheme at the Battle of Midway, this Nakajima Type 97 Carrier Attack Aircraft is configured as a torpedo bomber with its Type 91 838 kg (1,847 pound) torpedo. The aircraft, later designated "Kate" in the Allied code system, was also effective as a horizontal bomber, in which role it could carry a Type 99, 797 kg (1,757 pound) armor-piercing bomb or a 805 kg (1,775 pound) land-attack bomb.



As the Pearl Harbor strike force assembles in November 1941, Hiryu is in the center of this photo, taken from the Akagi. Two Type 81 torpedoes are on the Akagi's flight deck.

way to establishing the huge construction industry Japanese leaders like Adm. Isoroku Yamamoto, who conceived and led the attack on Pearl Harbor on Dec. 7, 1941, feared.

This book begins with a 33-page description and history of the Hiryu, accompanied by photos and a chronology of its brief service with the Imperial Japanese Navy, which ended with its sinking on June 5, 1942, at Midway after being mortally damaged by American SBD Dauntless dive bombers on the 4th and finally scuttled by two torpedoes fired by a Japanese destroyer. Hiryu's Capt. Tomeo Kaku and Rear Adm. Tamon Yamaguchi, Commander, Carrier Division 2 (including Hiryu and another fleet carrier Soryu, sunk on June 4), elected to go down with the ship.

From that point, Draminski's book takes on a rather different route by devoting the remaining nearly 300 pages to an intense graphic description of its external and internal appearances and the various parts that contributed to the carrier's overall construction and use as a ship of war. Besides the expected aircraft that she carried as her air wing, such unique views as deck plans, showing aircraft placing and various aspects of the ship, almost as if you were standing on the flight deck, or off her side from another ship. Other details are much too numerous to list here.

A most unusual publication that should have a place in most enthusiasts' or historians' collections. 🇯🇵



F3D/EF-10 Skyknight Units of the Korean and Vietnam Wars.

Joe Copalman, Osprey Publishing, UK. 2022. 96 pp. Ill.

Occasionally forgotten in Navy and Marine Corps aviation history, the Douglas F3D Skyknight was a twin-jet carrier-based night fighter with a mixed career that included a brief use in its intended role aboard carriers with the Navy. It eventually became a shore-based escort and night fighter

for the Navy and Marine Corps during the Korean War. It then served a surprisingly lengthy and vital tour as an Electronic Countermeasures (ECM) platform in the first half of the Vietnam War, where it was sorely needed during the Rolling Thunder campaign to defend against North Vietnamese antiaircraft and surface-to-air missile (SAM) defenses and occasionally against the initial engagements involving MiG-17s directed by ground-based ground controllers. In this last role, the EF-10 model of the Skyknight was an important companion to the Air Force's EB-66 Destroyer originally developed from the Navy's long-lived A3D (later A-3) Skywarrior carrier-based bomber.

The Skyknight's night exploits over Korea have seen more exposure than those of the EF-10s Vietnam period of service. By that time, the Navy had long retired its F3Ds, but the Marines had kept the aircraft in service long afterward. It is this period in the Skyknight's career that gives much new information, photos and profiles for the reader interested in the Skyknight's career. Details in how the F3D became the EF-10 are a new revelation. How the big two-engine once-carrier-based night fighter assumed the vital role protector of strike forces into North Vietnam for the last half of the 1960s have never been described in such detail.

One error, however, on page 56, lists the Pacific Fleet's VFP-63 as the RF-8A squadron involved in 1962's Operation Blue Moon during the Cuban Missile Crisis. However, that squadron was the Atlantic Fleet's VFP-62.

No. 143 in Osprey's Combat Aircraft series, first-time Osprey author Joe Copalman's biography of Douglas's Skyknight book is well written and nicely supported with photos and color profiles by busy company artist Jim Laurier, with the usual exciting cover illustration by Scottish digital artist Gareth Hector. 🇯🇵



F9F Panther vs Communist AAA, Korea 1950-53

By Peter E. Davies, Osprey Publishing, UK. 2022. 80 pp. Ill.

No. 121 in the long-running “Duel” series, this latest title by prolific Osprey author Peter Davies addresses an

interesting, seldom-described area in the air war during the Korean War, that of one of the U.S. Navy’s two major jet fighters’ record against the often fearsome barrage of Communist major defenses, that of often intense ground anti-aircraft fire. What would become the second most-feared ground defense in the Vietnam War some 15 years later, the surface-to-air missile, the SAM, had not been perfected and thus, the North Koreans had to rely on their thickets of Communist Soviet- and Chinese-supplied 57mm and 100mm guns, occasionally augmented by 82mm unguided



U.S. Marine Corps photo

Before he gained fame as an astronaut and U.S. Senator, then-Marine Maj. (later Col., retired), John H. Glenn, flew combat sorties in WWII and Korea. Here he stands beside the tail of his Marine Fighting Squadron (VMF) 311 F9F Panther after returning from a ground-attack mission in Korea in March 1953. Enemy fire punched a 6-inch hole in the tail as well as 375 smaller holes. Grumman aircraft were well-known for sustaining heavy damage while still being able to return to their ship or shore base.



U.S. Marine Corps photo

A view of a then-F3D Skyknight of Marine Composite Reconnaissance Squadron (VMCJ) 1 taken in December 1959. The aircraft was assigned to Marine Aircraft Group 12. By this time, the Navy and Marine Corps had transitioned to the overall gull grey color scheme from the WWII era Navy sea blue color. The Marines flew their Skyknights in these colors throughout Vietnam. VMCJ-1 eventually flew more than 25,000 combat sorties, involving more than 52,000 flight hours in Vietnam.



U.S. Marine Corps photo

Then-Lt. Col. Robert F. Conley poses on the side of a VMF(N)-513 F3D, painted in flat black, during the war in Korea. He and his Radar Operator, Master Sgt. James H. Scott shot down a North Korean MiG-15 on Jan. 31, 1953, the last of six MiG kills by the squadron. Conley retired as a brigadier general in May 1973 with 32 years of active duty service. Conley had also commanded MAG-11 during the early stages of the Vietnam War in 1965 and had helped bring the first shore-based Marine F-8s of VMF(AW)-312 to Vietnam.

For their help in researching facts for the F3D review, thanks to Dr. Brian F. Neumann and Dr. Seth Givens of the Marine Corps History Division, Quantico, Virginia, and the late Dr. Frank Olynky, well-known “aceologist” authority and long-time historian for the American Fighter Aces Association.

rockets, supplied by their Soviet benefactors. Combined with the impressive Russian-designed-and-built high-tailed MiG-15, whose performance when flown by Russian surrogate pilots could match that of the Grumman Panther and most other Allied jets of the time, the North Korean ground flak sites presented a

highly dangerous threat to the Panthers on ground-attack missions.

Perhaps a sidebar to this statement is graphically shown in the movie “The Bridges at Toko-Ri,” the excellent adaptation of James Michener’s novella, which actually features the McDonnell F2H Banshee, not the Panther, as the mount

of Naval Aviator Harry Brubaker, played by actor William Holden. However, the availability of Banshees, as well as a suitable carrier, which was ably portrayed by the USS Oriskany (CVA 34), demanded the substitution of Panthers for the book’s Banshees. In the Oscar-winning action scenes, Holden and his compatriots fly several missions against enemy targets. In the movie’s final mission, Holden’s Panther is hit by North Korean flak requiring him to crash-land in Communist territory with little hope of rescue. His dreams and fears of being struck by fearsome North Korean AAA come true in the film’s climax.

Peter Davies’ book details other aspects of the Panther’s Korean War log, which are also described by Osprey author Warren Thompson in his “Panther Units in the Korean War” book for Osprey’s 2014 Combat Aircraft series book, No. 103. Where Thompson’s book focuses more directly on the experiences of the pilots of Navy and Marine Corps Panthers against air-to-air action, Davies’ new book hones in on how the Panther and its aviators met the enemy ground defenses, which as many veterans of those times will agree were the most harrowing and perhaps effective. Those pilots who flew in Vietnam against North Vietnamese MiGs as well as the heavy flak and SAMs, would also probably attest to the fact that the guns and missiles presented the most fearsome weapons they faced over Hanoi, Haiphong and other cities and facilities.

Indeed, two well-known Marine personalities, then-Major and future astronaut and U.S. Senator John Glenn and recalled reservist baseball’s Red Sox slugger Ted Williams, ran into Communist flak sites and barely made it back to their base in South Korea while flying Panthers for VMF-311. As several of the Osprey books dealing with this period and the U.S. Navy aircraft of the air war in Korea, the experiences of the recalled Naval Air Reserve squadrons and pilots, Peter Davies’ latest book also includes accounts of these citizen aviators. 🛩️

Right, Red Sox left fielder Ted Williams prepares to get into his F9F Panther.

Williams gained his Wings of Gold as a Marine/Naval Aviator in WWII.

Although he did not see action, he served as a flight instructor. After the war, he remained in the Marine Reserve, and to everyone’s surprise, he was recalled to action during the Korean War, even though he had not flown a plane for eight years. After refresher training and transition training to the F9F Panther, he was assigned to VMF-311, often flying as John Glenn’s wingman. On Feb. 16, 1953, while flying an F9F-5 on a strike into North Korea, Williams’ fighter was badly damaged by enemy fire.

He struggled to make it back to his base, K-13 at Suwon, South Korea. He bellied in and narrowly escaped injury, himself. His Panther (Buno 126109) is shown below, smoking after Williams escaped from the cockpit.



U.S. Marine Corps photo



U.S. Marine Corps photo

I AM NAVAL AVIATION

Lt. Cassie Gettinger, HSC-22



NAVAL AVIATION NEWS

NAVAIR Command Communications Department ■ 47123 Buse Road, Suite 547 ■ Patuxent River, MD 20670

◀◀ BACK TO TOP ▶▶