NAVAL AVIATION NEWS

THE FLAGSHIP PUBLICATION OF NAVAL AVIATION SINCE 1917 SPRING 2025

Navy Celebrates
80 YEARS OF FLIGHT TEST

WHAT'S INSIDE


26


24


40


17
600


6


10

NAVAL AVIATION NEWS

SPRING 2025 VOLUME 107, NO. 2

DEPARTMENTS

FEATURES

ON THE COVER

On the Cover: *A stylized montage of aircraft and aviators highlight the 80th anniversary of the U. S. Naval Test Pilot School. (U.S.Navy photo illustration by Fred Flerlage).*

In this edition of Naval Aviation News*, we highlight many of the achievements of the U.S. Naval Test Pilot School (USNTPS) as it celebrates 80 years of training the best and brightest pilots responsible for testing all type/model/series of aircraft deployed and developed by the Navy and Marine Corps. Learn about this crown jewel of Naval Aviation on page 26. On page 50, read about the efforts at Naval Air Warfare Center Aircraft Division to development an of an oxygen testing system that measures impurities in air systems, a result of the Navy's focus on aircrew safety. While this magazine often highlights operations aboard aircraft carriers, on page 46, we focus on the delicate orchestration of the crew aboard the amphibious assault ship USS Wasp (LHD 1). And, read about two generations of pilots who have heard the calling of the TACAMO mission on page 37.*

On the back cover: *Aviation Structural Mechanic 2nd Class Kristiana Tyler, assigned to Helicopter Maritime Strike Squadron (HSM) 51, installs a tail fastener to an MH-60R Seahawk on the flight deck of the Arleigh Burke-class guided-missile destroyer USS Preble (DDG 88) in the Philippine Sea, Nov. 30, 2024. Preble is forward deployed and assigned to Destroyer Squadron (DESRON) 15, the Navy's largest DESRON and the U.S. 7th Fleet's principal surface force. (U.S. Navy photo by MCS 1st Class Ryre Arciaga)*

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

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Enhancing Naval Combat Readiness: The Critical Role of Air Warfare Officers

By Cmdr. Peter "Corumbo" Kowalcyk and Cmdr. Michael "Romeo" Rogers

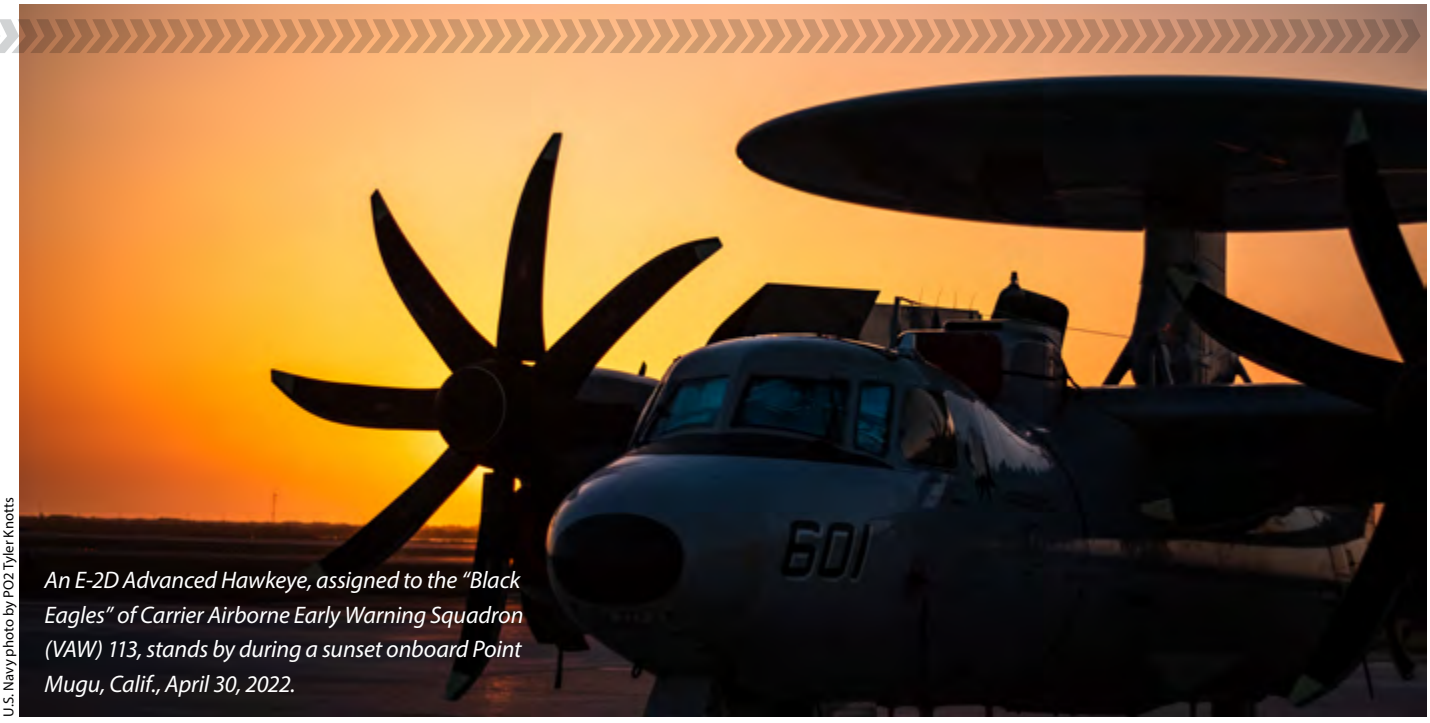
Naval Air Warfare Operators (AWOs) are air battle managers (ABM) detailed from the E-2 Hawkeye community to provide the Air and Missile Defense Commander (AMDC) with air defense expertise, levying experience from their prior tours aboard aircraft carriers and working with carrier air wing staffs. As designated Naval Flight Officers, AWOs have completed flight training at Naval Air Station Pensacola, Florida, E-2 Hawkeye Fleet Replacement Squadron (FRS) training, qualified as ABM Mission Commanders during their first sea tour, and completed a competitive shore duty such as FRS ABM instructor. An AWO typically has over 10 years of E-2 Hawkeye experience before being detailed as an AWO.

AWOs embark on the AMDC ship from the start of Surface Warfare Advanced Tactical Training (SWATT) through deployment. The AWO's E-2 Hawkeye background augments the already high-performing AMDC ship's combat team, comprised of senior surface warfare officer department heads, limited duty officers, chief warrant officers, and senior enlisted subject matter experts in air and missile defense tactics.

In addition to their planning roles, AWOs can train and qualify as Force Anti-Air Warfare Coordinators (FAAWCs) to supplement the AMDC watch teams. Most AWOs will join the AMDC team by Composite Training Unit Exercise (COMPTUEX), but the Naval Surface and Mine Warfighting Development Center (SMWDC) strives to pair AWOs as early as possible to build rapport and grow with their shipboard team. Cmdr. Peter "Corumbo" Kowalcyk, Cmdr. Michael "Romeo" Rogers and Lt. Cmdr. Timothy "Fun Size" Lloyd recently deployed with their AMDC ship and were force multipliers who enhanced significantly the air defense capability across their strike groups.

During the onset of hostilities in the Red Sea, Kowalcyk—embarked aboard USS Philippine Sea (CG 58)—was instrumental in streamlining and enhancing the kill chain for the Dwight D. Eisenhower Carrier Strike Group (IKECSG). His collaboration with U.S. Central Command in the Red Sea optimized the force's air defense posture, enabling U.S. and coalition vessels to engage incoming Houthi threats against both maritime forces and global trade routes. His presence increased the lethality and efficiency of the AMDC for the CSG, as well as the Combatant Commander's Sector Air Defense.

Similarly, Rogers provided the Theodore Roosevelt Carrier Strike Group (TRCSG) with comparable expertise and leadership across



U.S. Navy photo by PO2 Tyler Knotts

An E-2D Advanced Hawkeye, assigned to the "Black Eagles" of Carrier Airborne Early Warning Squadron (VAW) 113, stands by during a sunset onboard Point Mugu, Calif., April 30, 2022.

both the 7th and 5th Fleet areas of responsibility. His efforts integrated 18 U.S. and coalition vessels into the CSG air defense structure, enabling dynamic operations in the 7th Fleet. Rogers and Kowalcyk executed a seamless turnover of air defense responsibilities between their respective CSGs during operations in the U.S. Central Command area of responsibility.

In addition to their operational contributions, AWOs play a vital in post-deployment readiness training. Rogers provided specialized training to USS Daniel Inouye (DDG 118), a Flight IIA DDG, enabling the crew to excel as the AMDC while USS Lake Erie (CG 70) underwent maintenance.

These achievements underscore the value AWOs bring as force multipliers to both the AMDC and the CSG as a whole. Air Defense Commanders are increasingly requesting AWOs to integrate earlier in the CSG workup cycle to maximize combat readiness.

Overall, SMWDC Air Warfare Officers provide critical expertise, skills and experience, directly enhancing the Navy's ability to conduct effective air operations and support mission success.

Cmdr. Peter "Corumbo" Kowalcyk and **Cmdr. Michael "Romeo" Rogers** are both senior post-squadron E-2 Hawkeye department head Air Battle Managers and Air Warfare Officers at Naval Surface and Mine Warfighting Development Center Fleet Training Atlantic, Virginia.

Grampaw Pettibone

Gramps from Yesteryear: March-April 2005

Illustration by Ted Wilbur

"I should get at least a DFC for this..."

Mountain Mentor

Due to an error in the schedule-writing process and personal neglect, a squadron's most experienced T-34C Naval Air Training and Operating Procedures Standards (NATOPS) evaluator launched solo on an out-and-in, although he was fresh from leave and out of currency to fly by himself. The pilot, who six months earlier had weathered a human factors board based on his declining level of professional effort, cancelled his Instrument Flight Rules (IFR) clearance and proceeded Visual Flight Rules (VFR) shortly after takeoff. After performing several practice landings at two civilian airfields, the pilot continued northbound toward his intermediate stop, skirting ridgelines along the way. As the pilot started a turn around the final peak, he focused his attention on the radio console. Just as he finished dialing in his intermediate stop's tower frequency, he felt the aircraft shudder. He immediately noted that he had developed a huge rate of descent. He pushed the throttle to its limit and tried to turn away from the oncoming mountain. Realizing impact was imminent, the pilot intentionally stalled the airplane, electing to land uphill instead of crashing downhill and potentially tumbling.

The T-34 hit the rocky slope with almost no forward speed. The pilot managed to crawl out of the wreckage in spite of a broken hand and ankle. Perched above the crash site and away from a small fire that had started in some nearby vegetation, he attempted to use his PRC-90 but was unable to communicate over the Emergency Locator Transmitter (ELT) beacon. He managed to fire one pencil flare. Hurt, cold and exhausted, the pilot waited for somebody to rescue him. A long time passed. The pilot wondered if he'd survive a night on the mountain.

Several hours later a nearby forest fire observer saw smoke. He activated a U.S. Forest Service spotter plane that, in turn, found the crash site. Another plane dropped a line of fire retardant near the wreckage, inadvertently coating the downed pilot in the process. A medevac helicopter lowered a medic who administered first aid. As the rescue helo hovered above the pilot and medic, embers from the fire were blown onto the crash site, for the most part torching the stricken T-34 that had remained intact. As the fire consumed the trainer, the pilot was hoisted off the mountain.

Grampaw Pettibone says...

Nothing burns my biscuits like this kind of breakdown in the way things ought to go. This guy had to be screaming "failing naval aviator" way before this little out-of-bounds adventure happened. Now I'm not trying to release this pilot from his own wing-wearing responsibility, but I am saying that sometimes a squadronmate is in serious need of what city folks call an "intervention." (I heard about it on the wireless once.)

Airscoop

Compiled by Rob Perry

Navy's Carrier Airwing Flies Further with Hercules' New Tanker Approval

U.S. Navy photo by Erik Hildebrandt

A U.S. Navy Reserve KC-130T refuels an EA-18G Growler in the skies over Naval Air Station Patuxent River in Maryland during testing that enabled the service's fleet of Hercules aircraft to aerially refuel a significantly expanded number of aircraft in early 2025.

PATUXENT RIVER, Md.—The Navy Reserve's KC-130T Hercules fleet, upgraded with the NP200 propeller system, is cleared to aerially refuel a significantly wider range of aircraft across the carrier airwing after envelope expansion testing at the Naval Air Warfare Center Aircraft Division (NAWCAD), which concluded in early 2025.

The test effort expands Hercules' mission—and that of the Navy's fleet reserve, which exclusively operates the aircraft—beyond its primary focus on logistics and cargo transport.

"Prior to this testing, we only had a single aircraft cleared for refueling from the upgraded KC-130T," said NAWCAD's developmental test wing Commodore Capt. Elizabeth Somerville. "This advanced capability gives us flexibility in any future conflict."

Naval Aviation's F-35B/C, F/A-18, EA-18, CH-53K, CH-47, H-60s and AV-8B were cleared for air-to-air refueling from KC-130T after testing by NAWCAD federal government engineers, testers and military test pilots from Air Test and Evaluation Squadron (VX) 20, along with industry partners who worked to make sure Hercules could refuel the aircraft safely with its upgraded NP200 propeller system.

"If we look forward to any future fight, it's going to take intense collaboration between all of the forces: Navy, Marine Corps, Air Force, Army, Coast Guard," Somerville said. "Any resource that provides fuel airborne is going to be invaluable to all assets that are flying."

The test effort significantly increases Naval Aviation's operational reach and flexibility, as well as that of several international allies, following a request by U.S. Pacific Fleet.

The K-130T Hercules is a multi-role, long-range, land-based tactical aircraft that provides logistical support to fleet operating forces.

NAWCAD employs more than 20,000 military, civilian and contract personnel. It operates test ranges, laboratories and aircraft in support of test, evaluation, research, development and sustainment of everything flown by the Navy and Marine Corps. Based in Patuxent River, Maryland, the command also has major sites in St. Inigoes, Maryland, Lakehurst, New Jersey, and Orlando, Florida.

From the Naval Air Warfare Center Aircraft Division, Patuxent River, Maryland, public affairs.

'Flying Nightmares' Bring F-35B Thunder to Fort Worth

FORT WORTH, Texas—Marine Fighter Attack Training Squadron (VMFAT) 502, the "Flying Nightmares," trained new and transitioning pilots on the F-35B Lightning II on a two-week detachment training at Naval Air Station (NAS) Joint Reserve Base (JRB) Fort Worth through March 13, focusing on air-to-air and air-to-surface skills.

The "Flying Nightmares," a Fleet Replacement Squadron, target two groups: Category 1 pilots, fresh from undergraduate flight training, and Category 2 pilots, shifting from older aircraft to the F-35B.

"The focus is air-to-air execution and air-to-surface skills," said Lt. Col John Koepke, VMFAT-502 instructor pilot. NAS JRB Fort Worth's diverse airspace and facilities amplify this two-week push.

For Category 1 and 2 pilots, training spans a year, progressing from basic flights—point-to-point navigation, landings and approaches—to complex multi-ship strike missions, including nighttime bomb drops over vast distances. Students arrive an hour before takeoff, reviewing weather, prepping gear and conducting risk analysis, followed by attending an hour-long brief covering every step from startup to shut down.

"Standardized procedures streamline this," Koepke said.

Pilots then suit up, donning custom-molded helmets, 30 minutes before flying an hour-long sortie, tackling dogfights and tactical maneuvers.

Deploying from Marine Corps Air Station Miramar, VMFAT-502 brings over 220 personnel, nearly half its 500-strong squadron, to NAS JRB Fort Worth, flexing its deployment muscle, Koepke said.

"New airspace and challenges sharpen our instructors and students," he said. "Unlike Miramar's familiar skies, Fort Worth's joint reserve base prevents skill atrophy, preparing pilots for diverse environments—a critical edge for a squadron focused on training, not overseas ops."

Setting up the detachment faced minimal hurdles, thanks to NAS JRB Fort Worth's support.

"The communication stream has been phenomenal; any friction points were resolved fast," Koepke said. "Base staff bent over backwards, ensuring seamless execution."

The squadron also coordinated with the VMFA-112 Fighter Squadron stationed onboard NAS JRB Fort Worth for dogfight training, amplifying the F-35B's tactical edge.

"The F-35B's vertical takeoff and landing, plus short-field capabilities, make it a Marine Corps standout," Koepke said. Ideal for dynamic environments with short runways or vast water gaps, its versatility is drilled into trainees. "We instill how it conquers distance and adapts."

As the detachment ended, Koepke said he hopes pilots and maintainers leave stronger.

"I want them to grow from operating away from Miramar, build relationships and gain experience," he said.

The Fort Worth stint—new terrain, new ties—primes them for future fleet demands.

"We're honored to host VMFAT-502 and support their training requirements," said NAS JRB Fort Worth Air Operations Officer Cmdr. Aaron Johnson.

NAS JRB Fort Worth is the first and finest joint reserve base, known for training and equipping aircrews and aviation ground support personnel, while supporting missions such as airlift, aerial refueling and global mobility, making it an integral part of the national defense infrastructure.

Written by Sandy Owens, communications specialist with Naval Air Station Fort Worth Joint Reserve Base.

An F-35B Lightning II from Marine Fighter Attack Training Squadron 502, the 'Flying Nightmares,' sits with its canopy open during a training detachment at Naval Air Station Joint Reserve Base Fort Worth, Texas, March 2025.

U.S. Navy photo Sandy Owens

U.S. Marine Corps photo by Cpl. Samantha Rodriguez

U.S. Marine Corps F-35B Lightning II aircraft with Marine Fighter Attack Squadron (VMFA) 214, Marine Aircraft Group 13, 3rd Marine Aircraft Wing, taxi the flightline after arriving at Marine Corps Air Station Iwakuni, Japan, March 8.

U.S.-Based F-35s Replace Hornets in Rotational Deployments to Japan

MARINE CORPS AIR STATION IWAKUNI, Japan—The U.S. Marine Corps' Japan-based aviation forces received their first F-35 deployment from the continental United States on March 8. Based out of Marine Corps Air Station (MCAS) Yuma, Arizona, Marine Fighter Attack Squadron (VMFA) 214, an F-35B squadron of Marine Aircraft Group 13, 3rd Marine Aircraft Wing, deployed to MCAS Iwakuni, Japan, under the Marine Corps' Unit Deployment Program (UDP) to support Marine Aircraft Group (MAG) 12, 1st Marine Air Wing (MAW) flight operations in the Indo-Pacific.

VMFA-214, known as the "Black Sheep," transitioned to the F-35B platform in March 2022 and is the first F-35 squadron to take part in this rotational and continuous augmentation of Marine aviation forces in the Indo-Pacific.

"Our focus during this deployment is threefold," said Lt. Col. Robert F. Guyette, the commanding officer of VMFA-214. "To seamlessly integrate within Marine forces, joint forces, and regional allies and improve warfighting readiness as a combined force, refine our ability to operate from austere locations, and align with key Marine Corps concepts like Expeditionary Advanced Base Operations to maximize survivability and airpower projection."

Though MAG-12 maintains two fully operational F-35B squadrons, the commander of MAG-12, Col. Kyle B. Shoop, described the addition of a U.S.-based F-35 squadron to the region as unique for operations with joint and allied forces.

"An additional F-35B squadron increases Marine aviation's contribution to operations in the Indo-Pacific with joint forces, allies and partners alike from established and scantily developed locations for distributed operations," Shoop said. "The F-35B's ability to operate from austere locations, integrate with joint networks, and provide enhanced battlespace awareness makes it a force multiplier, ensuring that any force the platform is a part of remains at the cutting edge of modern warfare."

The UDP provides continental U.S.-based units with experience operating in the Indo-Pacific through continuous and overlapping deployments to the region. Traditionally, fixed-wing aircraft groups have supported the UDP with F/A-18 Hornets and AV-8B Harriers. While Hornet deployments are available to support the UDP in the future, VMFA-214's deployment marked a milestone in the February 2025 Marine Aviation Plan: the transition from fourth- to fifth-generation aircraft.

When asked about the transition, Maj. Gen. Marcus B. Annibale, commanding general of 1st MAW, emphasized the move is designed to meet operational needs in the Indo-Pacific with a forward-leaning approach.

"In the bigger picture, as the Marine Corps advances its aviation plan, more F-35 squadrons will stand up, munitions with greater capabilities will become available, the platform's support systems will strengthen, and the F-35's technology suite will continue to evolve," Annibale said. "As more F-35 squadrons deploy to the remote and contested environments of the Indo-Pacific, Marine aviation's readiness will grow, and our capabilities as a combined force in this region will become even more lethal."

Story courtesy of the 1st Marine Aircraft Wing.

Marines Test Wireless Long-Range Precision Fires Successfully

U.S. Navy photo

Long-Range Precision Fires (LRPF) was executed successfully at Yuma Proving Grounds (YPG) in Yuma, Ariz., in November 2024. The event was completed with an AH-1Z Viper launching a single weapon by way of a wireless application.

PATUXENT RIVER, Md.—Late last year, the Marine Corps executed successfully its first live employment test of a new Long-Range Precision Fire (LRPF) capability. The event was executed at Yuma Proving Grounds (YPG) in Yuma, Arizona, where an AH-1Z Viper conducted single launch by way of a wireless application via Marine Air-Ground Tablet (MAGTAB).

The November test at YPG exceeded the threshold requirements in position, navigation and timing. This activity marks the first time a Marine Corps rotary-wing platform has employed a weapon system using a tablet-controlled device.

"Assessments of current and future capability gaps of the fleets needs identified this LRPF initiative as a cost-effective, long-range precision weapon for use against maritime and land-based targets," said Col. Scott Shadforth, Director, Expeditionary Maritime Aviation-Advanced Development Team (XMA-ADT).

This project is an Office of the Under Secretary of Defense for Research and Engineering (OUSD R&E)-sponsored Defense Innovation Acceleration (DIA) project led by the XMA-ADT to evaluate cost-effective, long-range disparate effects in expeditionary and maritime environments.

From the Expeditionary Maritime Aviation-Advanced Development Team.

Marines Fast Track New Tug for MQ-9 Reaper

PATUXENT RIVER, Md.—The Navy and Marine Corps Multi-Mission Tactical Unmanned Aerial Systems Program Office recently delivered a cutting-edge aircraft towing solution to a Marine Corps squadron at Cherry Point, North Carolina, addressing urgent operational needs in record time.

Partnering with SupplyCore, the team delivered the TowFLEXX TF-3 Milspec, a remote-controlled aircraft tug that allows a single operator to maneuver military aircraft with unprecedented precision, maintaining the aircraft's nose wheel alignment while enabling 360-degree turns in confined spaces.

"What typically would have taken years in development was accomplished in less than four months," said Capt. Dennis Monagle, program manager. "This demonstrates our team's ability to rapidly respond to urgent fleet requirements."

The program office collaborated with the Defense Logistics Agency's Special Operational Equipment Tailored Logistic Support Program to deliver the system rapidly. This collaboration allowed the team to bypass traditional acquisition timelines while upholding rigorous safety standards.

"The TowFLEXX technology underwent comprehensive validation to ensure compliance with Naval Aviation Enterprise safety requirements," said Maj. Jeff Kennedy, program office warfighter readiness deputy. "What makes this system special is its adaptability across multiple aircraft platforms while remaining expeditionary in nature."

Marine Aviation Group 14, operating under the 2nd Marine Aircraft Wing, will be the first to integrate the system fully into their daily MQ-9A Reaper operations. Kennedy said this technology is particularly valuable for unmanned air system operations, where hangar and flightline space is often limited.

As the Marine Corps continues expanding its MQ-9 unmanned aircraft community, solutions like the TowFLEXX TF-3 represent the kind of practical innovation needed to support growing aviation requirements.

The successful deployment underscores the program office's commitment to enhancing combat readiness through fleet-focused, automated solutions. The Navy and Marine Corps Multi-Mission Tactical Unmanned Aerial Systems Program Office manages the acquisition lifecycle of the Marine Corps' MQ-9A Reaper, a system providing warfighters with reconnaissance, surveillance, target acquisition and advanced multi-mission capabilities.

From the Navy and Marine Corps Multi-Mission Tactical Unmanned Aerial Systems Program Office.

U.S. Navy photo

TowFLEXX allows a single operator to maneuver military aircraft with unprecedented precision, maintaining the aircraft's nose wheel alignment while enabling 360-degree turns in confined spaces.

Marine Corps MQ-9 Reapers Enhanced with Advanced Payload Upgrade

PATUXENT RIVER, Md.—The Navy's MQ-9 Reaper test squadron at Naval Air Station Patuxent River, Maryland, received the first SkyTower II (STII) pod in preparation for the system's initial operational capability (IOC) next year.

Air Test and Evaluation (UX) 24 loaded the new pod onto the aircraft Feb. 25, conducting initial power-on checks, the first step into integrating the new capability in the aircraft platform.

"The program is excited to deliver SkyTower II for testing, marking a major milestone in our development journey," said Capt. Dennis Monagle, Multi-Mission Tactical UAS program manager. "Over the past two years, we've partnered with GALT, a small business prime vendor, to rapidly develop this unique capability using middle-tier acquisition, accelerating innovation for the warfighter. With robust system and integration testing now underway, we remain on track to achieve initial operating capability this year, delivering critical capability to the U.S. Marine Corps and the joint forces."

STII is an airborne network extension pod that enhances cross-domain communication capabilities and links communications between disparate forces. It is required to execute the Intelligence, Surveillance and Reconnaissance (ISR) concept of operations by providing tactically relevant operational communications and data sharing capabilities with many forces in support of the MQ-9 Reaper's operational mission.

UX-24 also completed a fit check of the MQ-9 in the large anechoic chamber at Pax River in late February. The team conducted a number of tests and hoisted the aircraft for the first time as a risk reduction for upcoming program efforts. The tests proved the ability to hang the aircraft safely while providing power, cooling and satellite link with the aircraft for communications, command and control.

Over the next several months, UX-24 will conduct final test events before delivering the upgraded MQ-9s to the fleet.

"The team has been able to accomplish a lot of work in a very compressed timeline by developing and executing these test plans for the chamber event and STII testing," said Cmdr. Lauren Lawson, MQ-9 government flight test director. "The dedication shown and technical challenges they've overcome to conduct this critical testing to help develop the best product possible to support the Marines is truly commendable."

Marine Unmanned Aerial Vehicle Squadron (VMU) 3 is flying MQ-9's in theater today and will be the first to deploy with this new system in 2026.

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.

From the Multi-Mission Tactical UAS Program Office.

U.S. Navy photo

An MQ-9 Reaper is upgraded with the SkyTower II pod that will be deploy to a Marine Corps squadron next year to enhance operational capability.

HM-12 'Sea Dragons' Host Sundown Ceremony

U.S. Navy photo by MC2 Nolan Pennington

An MH-53E Sea Dragon, assigned to Helicopter Mine Countermeasures Squadron (HM) 12, participates in a flight exercise, June 2021. HM-12 safely trains pilots and aircrewmen to employ the Navy's MH-53E assets worldwide in a variety of missions.

NORFOLK, Va.—Helicopter Mine Countermeasures Squadron (HM) 12 held a sundown ceremony at Naval Station Norfolk, Virginia, March 21, closing the chapter on 54 years of excellence.

HM-12 retired the "Sea Dragons" insignia along with the nickname during the ceremony. HM-12 was established on April 1, 1971, at what was then called Naval Air Station Norfolk, but is now Chambers Field and is a part of Naval Station Norfolk. As the first squadron of its kind, HM-12 functioned uniquely as both an operational unit and as a readiness training squadron flying first the CH-53E Super Stallion helicopter, then transitioning to the MH-53E Sea Dragon helicopter.

"After serving 38 years in the Navy, there are certain tenets I abide my life and career by, and all of it started here at HM-12," said Retired Vice Adm. Kevin Scott, who served as the ceremony's guest speaker.

"This squadron has been around for 50 years, and they have armed their sailors and airmen to be ready to respond to the nations call globally, within 72 hours, throughout that 50 years, and I can't think of a better testament than to celebrate that today."

Capt. Eric R. Johnson, the commanding officer of HM-12, concluded the ceremony with his remarks.

"Sunning down is an end of an era and an exciting time for a transition in the Navy to modernize airborne mine countermeasures," Johnson said. "This community has a lot of camaraderie and friends that have stuck together over the years."

The sundown of HM-12 marks the end of an era and leaves HM-15 as the last Navy squadron flying the MH-53E Sea Dragon helicopter. This event celebrated the contributions and legacy of the people and the aircrafts that have played a pivotal role in Naval Aviation history.

Written by Mass Communication Specialist 2nd Class Julianna J. Lynch with Naval Air Force Atlantic Public Affairs.

U.S. Navy photo

Maj. Robert M. "Robin" Weede, Marine Attack Squadron (VMA) 231 Aviation Maintenance Officer, center, flies an AV-8B Harrier II+ from Marine Corps Air Station Cherry Point, N.C., to its new home at the Pima Air and Space Museum in Tucson, Arizona, Feb. 14.

Retired AV-8B II+ Soars to New Mission with Pmia Air and Space Museum

PATUXENT RIVER, Md.—A retired and demilitarized AV-8B Harrier II+ was inducted into the Pima Air and Space Museum in Tucson, Arizona, Feb. 14.

"This is a unique opportunity to preserve and share a vital chapter in aviation history while playing a valuable role in inspiring future generations," said Col. Mark Amspacher, AV-8B Weapon Systems Program Office program manager. "I hope this piece of Marine Corps history and embodiment of innovation, courage and dedication motivates younger generations to consider a career in aviation and service within the Marine Corps."

This aircraft, BUNO 165574, initially entered service Jan. 14, 1986, as an AV-8B Day Attack aircraft and was later remanufactured as an AV-8B II+ Radar aircraft July 31, 2001. It flew with Marine Attack Squadrons (VMAs) 311, 223, 214, 513 and 231, logging 1,539 combat flight hours and a grand total of 9,671 flight hours. The aircraft supported multiple Marine Expeditionary Unit deployments, including Operations Iraqi Freedom and Enduring Freedom, humanitarian efforts and Request for Forces.

This is the second AV-8B Harrier II+ inducted into a museum as the Harrier continues to sundown through 2026. The first, BUNO 164560, was inducted into the Hickory Aviation Museum in Hickory, North Carolina, July 15, 2024.

The program office, Headquarters, U.S. Marine Corps, Marine Aircraft Group (MAG) 14 and VMA-231 oversaw the comprehensive process of demilitarizing the aircraft, ensuring it was safe to display. VMA-231 Aviation Maintenance Officer, Maj. Robert M. "Robin" Weede, based in Marine Corps Air Station Cherry Point, North Carolina, flew the aircraft to the Pima Air and Space Museum, where visitors can learn about the aircraft's unique engineering design and capabilities.

The Harrier is a vertical/short takeoff and landing, light attack jet utilized by the U.S. Marine Corps, and the Italian and Spanish navies. In service for four decades, the Harrier mission is to destroy surface targets and escort friendly aircraft in austere conditions during expeditionary, joint and combined operations.

The platform provides close and deep air support, including armed reconnaissance and air interdiction, and conducts offensive and defensive anti-air warfare. The AV-8B Harrier II+ can operate from carriers and other suitable seagoing platforms, advanced bases, expeditionary airfields and remote tactical landing sites, offering versatility, firepower and mobility to counter enemies engaged by U.S. and allied ground forces.

The Pima Air and Space Museum opened its doors to the public May 8, 1976, and has grown to be the largest non-government-funded aviation museum in the United States. It has over 250,000 square feet of indoor display space and a collection of over 400 aircraft representing multiple decades of military, experimental, civil and commercial aircraft, and more than 125,000 artifacts. Its slogan, "Creating unlimited horizons in aerospace education through the preservation and presentation of the history of flight," highlights the importance of Harrier's preservation initiatives.

From the AV-8B Weapon Systems Program Office.

Navy Delivers New Crash and Salvage Cranes, Strengthening Fleet Readiness

PATUXENT RIVER, Md.—The Navy's Common Aviation Support Equipment Program Office delivered in February the first of 27 replacement Crash and Salvage Cranes (CSC) to Naval Air Technical Training Center (NATTC) in Pensacola, Florida.

The program office coordinated the development, acquisition and fielding with support from Naval Air Warfare Center Aircraft Division (NAWCAD) Lakehurst, New Jersey, Fleet Readiness Center Aviation Support Equipment (FRC ASE), NAVAIR Technical Data & Engineering Services Command (NATEC) and Allied Systems Company.

"The delivery of the new CSCs to the fleet enhances readiness and ensures the safety of our sailors deployed on aircraft carriers and amphibious assault ships around the world," said Capt. Matthew Wilcox, program office manager.

CSCs are usedto lift and move disabled aircraft on aircraft carriers and land helicopter dock ship flight decks. Flight operations are not allowed without these critical pieces of equipment.

The new CSCs, designed by industry partner Allied Systems Company, replaced the legacy carrier and amphibious assault crash cranes. The legacy CSCs, designed decades ago, exceeded their anticipated life expectancy and became increasingly difficult to maintain due to obsolescence issues. The new variants correct those deficiencies and are much easier to maintain.

The CSC has two variants: the carrier CSC (CCSC) and the amphibious CSC (ACSC). The CCSC has a heavier counterweight than the ACSC, and the lighter ACSC has "inriggers" within the width of the crane that increase its stability.

The Common Aviation Support Equipment Program Office is responsible for the procurement, development and fielding of Common Ground Support equipment and Automatic Test Equipment. Additionally, this command serves as the lead manager of the Aircraft Maintenance and Material Readiness List, Metrology and Calibration and Mobile Facilities programs in support of the Naval Aviation Enterprise.

From the Common Aviation Support Equipment Program Office.

U.S. Navy photo

A new Crash and Salvage Crane (CSC) arrives Feb. 27 to Naval Air Technical Training Center (NATTC) in Pensacola, Florida.

NAWCAD Lakehurst Certifies New Testing Equipment for Ship Motion Platform

LAKEHURST, N.J.—After three years of development, Naval Air Warfare Center Aircraft Division Lakehurst, New Jersey, successfully qualified the Motion Platform Aerial Sensor Suite (MPASS) prototype system for future use with the Ship Motion Platform (SMP).

Working in collaboration with the prime contractor Spidercam, MPASS "flies" a six-degree-of-freedom dolly using catenary cables, simulating the behavior of Unmanned Aerial Vehicles (UAVs) for developmental purposes. The system can carry payloads of up to 100 pounds and reach speeds of up to 17 knots. Depending on the payload and how the system is installed, MPASS can operate at altitudes between 50 and 90 feet, providing a versatile platform for evaluating UAV guidance systems, machine learning applications and developing dynamic UAV control systems.

The Motion Platform Aerial Sensor Suite (MPASS) prototype system successfully qualified for future use with the Ship Motion Platform.

U.S. Navy photo by Adam Hochron

SMP Lead Site Engineering technician Harry Beals said MPASS goes beyond the organic development of Autonomous Control Systems for UAVs through model-based engineering, artificial intelligence and machine learning to enhance obstacle avoidance and control. By enabling data acquisition and self-governance of vehicle control functions, Beals said there is minimal to no human intervention even in new environments, which he said allows for extended operation of UAVs and bipeds.

UAV Lead Test Engineer Rob Pellegrino said the system is set for installation at the SMP site in FY2026, utilizing retractable towers for a maximum height of 133 feet. While the system supports manual control, its primary focus is autonomous control, enabling consistent, repeatable UAV control system testing. Pellegrino said this approach accelerates advancement in UAV capabilities, particularly in-flight dynamics and landing performance across different sea states, all without requiring airframes, ships or Federal Aviation Administration approval.

Beyond UAVs, the MPASS system also supports obstacle avoidance control for omnidirectional vehicles in shipboard environments and provides methods to mitigate undesired motion in autonomous systems caused by ship motion.

The MPASS was recently tested during a two-week period using Lakehurst's Hangar 4 for proof-of-concept and qualification testing. Working alongside the Science and Technology group at Lakehurst, Pellegrino said the system met all system-level requirements and achieved key objectives, providing valuable early insights into the system's performance and potential for future uses.

"MPASS was always described as a new way to approach UAV development, allowing designers to separate the control system from the airframe. Finally seeing the system in action, being operated via an external control system, really put some perspective on the opportunities the system provides," Pellegrino said. "At its core, MPASS provides a real-world, large-scale test environment that is independent of the constraints that come with operating UAVs, allowing for tailored control system development as well as mission feasibility studies. I can't wait to see it installed at the Ship Motion Platform test site."

Pellegrino said the team overcame several obstacles to complete the qualification process, including facility issues and technical integration hurdles. He credited the Naval Innovative Science and Engineering Rapid Prototype Experimentation and Demonstration team and others for helping finish the testing process.

Written by Adam Hochron, communications specialist with Naval Air Warfare Center Aircraft Division, Lakehurst, New Jersey.

Lakehurst Team Steps Up to Meet Fleet Need for Critical Equipment

U.S. Navy photo by MC3 Michael Singley

An E-2D Hawkeye, assigned to the "Wallbangers" of Carrier Airborne Early Warning Squadron (VAW) 117, takes off from the flight deck of USS Abraham Lincoln (CVN 72) Nov. 29, 2021.

LAKEHURST, N.J.—Thanks to team members from the Naval Air Warfare Center Aircraft Division Lakehurst, New Jersey, the fleet restocked its supply of release elements, a critical safety item needed to launch C-2 Greyhounds and E-2 Hawkeyes from an aircraft carrier. With the help of more than 50 people, the fleet maintained its ability to launch the airborne and coordination aircraft from the decks of aircraft carriers worldwide.

In the middle of Fiscal Year 2024, In-Service Engineering (ISE) reported a critical shortage of this item, with none expected and no qualified vendors or active procurements available. Fortunately, Lakehurst's Prototype and Manufacturing Division (PMD) worked quickly to develop organic manufacturing capabilities, working with ISE, the Materials Engineering Lab, and its own artisans and quality assurance specialists to qualify as a supplier and deliver hundreds of the items in a relatively short timeframe.

"We successfully navigated that process, culminating in engineering approval as an authorized supply source. PMD was immediately contracted to manufacture 600 units for the Defense Logistics Agency, which were successfully completed and delivered within three months," said project team lead Doug MacKenzie. "We are gearing up to increase production for 2025 and beyond and expect to be a primary source of release elements to the fleet for years to come."

The initial 600-unit order, a mere fraction of the more than 3,700 expected to be delivered in 2025, was successfully completed by PMD, during a process that included acquiring the raw materials, programing CNC machines for this specific task, developing heat treating techniques, refining tensile testing processes, and establishing inspection methods, showcasing their ability to handle large-scale production.

"Within PMD, we typically manufacture in smaller quantities, so to take on a production-scale job like this is a change of pace and a stress test of our processes and procedures," MacKenzie added. "I knew this would be a great chance to prove ourselves. Hopefully, the lessons we learn from this effort will lead to more opportunities."

U.S. Navy photo

Pictured are the release elements created by the Lakehurst Prototype and Manufacturing Division. The pieces are necessary to launch C-2 Greyhounds and E-2 Hawkeyes from aircraft carriers.

New Heights: 3rd MAW Marines, Squadrons Earn Top Aviation Awards

MARINE CORPS AIR STATION MIRAMAR, Calif.—Marines and squadrons from 3rd Marine Aircraft Wing (MAW) have been recognized with 12 Marine Corps Aviation Association 2025 Aviation Awards, honoring their exceptional leadership and dedication to mission accomplishment. The highly competitive awards program spans 30 categories across the Marine aviation enterprise.

"This accomplishment reflects the commitment and high standards of our Marines," said Maj. Gen. James Wellons, commanding general of 3rd MAW. "Our Marines are truly the best at what they do, and it's a real honor to see this widespread recognition for our 3rd MAW award winners within the competitive arena of Marine aviation."

Each award honors a pioneering Marine aviator, celebrating excellence across aviation occupational specialties. The Alfred A. Cunningham Award, named for the first Marine aviator and director of Marine Corps Aviation, honors the Marine Aviator of the Year. This year's recipient is Maj. Zachary M. Sessa of Marine Fighter Attack Squadron (VMFA) 314.

VMFA-314 added to the distinction as the Marine Fighter Attack Squadron of the Year, receiving the Robert M. Hanson Award—an honor commemorating the master of individual air combat who downed 20 enemy planes in six consecutive flying days during World War II. Eighty-one years later, the "Black Knights" conducted multiple strikes on Houthi weapons storage facilities within Yemen, marking the first use of the F-35C Lightning II in combat operations.

During the Black Knights' 2024 deployment to the 7th and 5th Fleet areas of responsibility, Sessa led multiple combat sorties in Yemen and served as the Corps' first F-35C Weapons and Tactics Instructor integrated with the Navy's Carrier Strike Group 3. He simultaneously led the squadron in conducting deterrence missions while generating two Lightning Tactics Instructors, two Low Altitude Instructors, three Air Combat Maneuvering Instructors, six section leads, four division leads and one mission commander—multiplying capabilities across the fifth-generation fighter community.

"My recognition with the Alfred A. Cunningham Award is the result of the hard work and dedication of the team I've had the privilege to serve alongside," Sessa said.

This year's MCAA Awards debuted the James W. Frey Award and the Pioneer Award, recognizing the Marine Unmanned Aerial System (UAS) Officer of the Year and the Marine Enlisted UAS Sensor Operator of the Year, respectively.

Both awardees belong to Marine Unmanned Aerial Vehicle Squadron (VMU) 1—which won Marine UAS Squadron of the Year with the John I. Hudson Award, honoring the Marine fighter and reconnaissance pilot who was awarded a Bronze Star Medal with Combat "V" and 25 Air Medals during the Vietnam War.

U.S. Marine Corps photo by Lance Cpl. Jennifer Sanchez

U.S. Marines and aircraft with Marine Aircraft Group 11, 3rd Marine Aircraft Wing, conduct a formation flight as part of Project Legacy off the coast of San Diego, March 4, 2025.

In August 2021, VMU-1 became the first Marine Corps unit to procure the MQ-9A Reaper, a remotely piloted aircraft capable of conducting multiple mission sets—including multi-sensor imagery reconnaissance, unmanned aerial escort and electronic support. Based at Marine Corps Air Station Yuma, Arizona, VMU-1 is positioned to enable naval and joint force targeting remotely. A Marine aviator and sensor operator can control the aircraft from Yuma, even while it operates within another combatant command's area of responsibility, enabling flexible, long-range mission execution from across the globe.

In 2024, the "Watchdogs" supported vital U.S. national security interests in contingency, crisis and combat operations in both United States Central Command and United States Indo-Pacific Command, amassing over 1,130 flight hours across more than 187 sorties. Pioneering a new capability, VMU-1 became the first Marine Corps unit to launch and recover an aircraft in an operational environment.

Maj. Fabio Garciaquiroga is the inaugural recipient of the James W. Frey Award. As an MQ-9A pilot with VMU-1, he played a pivotal role in planning and executing classified named operations, demonstrating tactical precision as pilot in command during kinetic strikes, facilitating rapid battle damage assessments, and enabling follow-on strikes with unmatched efficiency. Garciaquiroga's efforts led to the successful integration of advanced payloads, maximizing intelligence collection while maintaining aircraft survivability in high-

risk environments. The award reflects the spirit of the Marine colonel whose visionary work laid the foundation for today's UAS operations, including validation of UAS combat employment in Iraq and Afghanistan, creation of the Marine UAS officer designation and UAS-specific training pipelines.

"I'm honored to be the first recipient of the James W. Frey Award, but the real credit belongs to the Marines who built this community through countless deployments, sorties and missions across the globe," Garciaguiroga said.

Staff Sgt. Christian Hurtado is the inaugural Pioneer Award recipient. As a Weapons Training Officer with VMU-1, he instructed 25 Marines through more than 75 training events. In 2024, Hurtado accumulated more than 700 MQ-9A flight hours across 266 sorties, supporting contingency operations and unit level progression. His decisiveness and mastery of the aircraft resulted in the success of multiple classified maritime domain awareness operations, including combat hours. The award honors the legacy of the RQ-2 Pioneer, a UAS operated by all-enlisted crews within the Marine Corps from 1986 to 2007. Throughout its 30-year history, Pioneer crews were integral to success in the Gulf War, Global War on Terror and a range of humanitarian missions.

"I have a great passion for unmanned aviation," Hurtado said. "I try to give back to my unit and the MQ-9 community by making it one percent better every day."

As the Marine Corps' largest air wing, 3rd MAW maintains its legacy of excellence and global power projection.

Written by 1st Lt. James Estillore, 3rd Marine Aircraft Wing.

Award Winners

3rd MAW Squadrons Recognized:

Marine Fighter Attack Squadron (VMFA) 314:
Robert M. Hanson Award
Marine Fighter Attack Squadron of the Year

Marine Heavy Helicopter Squadron (HMH) 466:
Keith B. McCutcheon Award
Marine Heavy Helicopter Squadron of the Year

Marine Light Attack Helicopter Squadron (HMLA) 367: **John P. Giguere Award**
Marine Light Attack Helicopter Squadron of the Year

Marine Unmanned Aerial Vehicle Squadron (VMU) 1:
John I. Hudson Award
Marine Unmanned Aerial Vehicle Squadron of the Year

Marine Aviation Logistics Squadron (MALS) 39:
Donald E. Davis Award
Marine Aviation Logistics Squadron of the Year

Marine Wing Support Squadron (MWSS) 371:
James E. Hatch Award
Marine Wing Support Squadron of the Year

3rd MAW Marines Recognized for Outstanding Performance:

Maj. Zachary M. Sessa, VMFA-314:
Alfred A. Cunningham Award
Marine Aviator of the Year

Maj. John P. Baum, VMFA-232:
Robert Guy Robinson Award
Marine Naval Flight Officer of the Year

Maj. Fabio Garciaquiroga, VMU-1:
James W. Frey Award
Marine Unmanned Aerial Systems Officer of the Year

Staff Sgt. Christian Hurtado, VMU-1:
Pioneer Award
Marine Enlisted UAS Sensor Operator of the Year

Staff Sgt. Douglas R. Gantt, VMFA-122:
Willie D. Sproule Award
Aviation Maintenance Marine of the Year

Sgt. Amy J. Zetino, MALS-13:
Kenneth W. Southcomb Award
Aviation Supply Marine of the Year

Aircraft Maintenance Enables a Capable Aircraft for Search and Rescue Missions

PHILIPPINE SEA—While Helicopter Sea Combat Squadron (HSC) 25 is embarked aboard USS America (LHA 6), the crew practices search and rescue (SAR) training at sea. SAR is a life-saving mission designed to recover people on land and at sea in emergencies. Aircrew personnel assigned to HSC-25 continuously sharpen their search and rescue skills by conducting mock recovery missions based on a variety of scenarios, such as a lost swimmer, man overboard or missing hikers to name a few examples.

"Whenever aircraft take off, there's always a chance of catastrophe," said Naval Air Crewman 2nd Class Christian Boll, one of the rescue swimmers from HSC-25. "It's my job to act as a safety net and mitigate that catastrophe. It's important in times of both war and peace."

Inside the MH-60S Seahawk, the crew includes naval aviators and aviation rescue swimmers. In the cockpit, pilots maintain both internal and external communications, a steady course and stable hover to safely deploy rescue swimmers and retrieve casualties. The crew chief is responsible for deploying the rescue swimmer via the hoist or jumping directly from the aircraft and relaying the status of personnel in the water, while the rescue swimmer ensures the survivor's safety.

The maintenance crew provides constant upkeep of the helicopter to ensure the aircraft is ready and able to respond to recovery missions at a moment's notice. Aviation Machinist's Mate 1st Class Nick Johnston takes pride in his job of performing daily maintenance inspections. "If I failed at my job, it would cost a life. The threat of causing a catastrophe is what keeps us maintainers sharp," said Johnston, a senior maintainer assigned to HSC-25.

"Each person's reasoning or calling to do the job is different and subjective. However, a common belief held by most is the phrase seen in the rescue swimmers' motto, 'So Others May Live,' which I think best exemplifies the overall mindset of those within a SAR-centric mission," said Lt. Sarah "SWAG" Papp, a SAR officer assigned to HSC-25.

HSC-25 provides reliable aircraft and crews for various mission sets: SAR, Helicopter Visit Board Search and Secure, Non-Traditional ISR, Maritime Interdiction, Verticle Replenishments (VERTREP), Close Air Support with hellfire, rockets or crew-served weapons and many more, which all could not be accomplished without a strong maintenance team and dedicated pilots and aircrew.

Since 1984, HSC-25 has launched 2,445 missions, resulting in 762 medical evacuations, and has rescuing 475 lives from waters and jungles of the island chain.

HSC-25 is the Navy's only forward-deployed MH-60S expeditionary squadron. Flying the MH-60S, HSC-25 supports permanently assigned detachments to USS America (LHA-6), home ported in Sasebo, Japan, and Commander Task Force 76. These detachments perform combat logistics, search and rescue and humanitarian assistance for U.S. 7th Fleet.

Naval Aviation News Magazine Wins First Place Navy Public Affairs Award

PATUXENT RIVER, Md.—The Naval Aviation News (NAN) magazine recently received the first place Team Publication in the Navy Public Affairs Awards (NPAA) program for calendar year 2024.

The NAN, housed under the umbrella of Naval Air Systems Command's (NAVAIR) Command Operations Group based at Naval Air Station Patuxent River, Maryland, reports stories related to advances in Naval Aviation technology, training, equipment, lethality, maintenance and other aspects necessary to support the warfighter. Along with exclusive stories penned by the staff and contributors, the magazine gathers stories from around the fleet to shine a light on the latest and greatest developments in Naval Aviation.

U.S. Navy photo by MCSN Kenneth Melseth

Naval Aircrewman (Helicopter) 3rd Class Zachary Santos, left, and Naval Aircrewman (Helicopter) 2nd Class Ethan Kubat, right, assigned to Helicopter Sea Combat Squadron (HSC) 25 walk across the flight deck of the forward-deployed amphibious assault ship USS America (LHA 6), while conducting flight operations in the Philippine Sea, Feb. 27.

America, lead ship of the America Amphibious Ready Group, is underway conducting routine integrated operations in U.S. 7th Fleet area of operations. U.S. 7th Fleet is the Navy's largest forward-deployed numbered fleet, and routinely interacts and operates with allies and partners in preserving a free and open Indo-Pacific region.

Written by Petty Officer 2nd Class Amy Mullins, USS America (LHA 6) public affairs.

The NAN has been the flagship publication of Naval Aviation since 1917.

The core team, consisting of Editor-in-Chief David Byrd, Art Director Fred Flerlage and Editor/Writer Rob Perry, publishes the NAN online quarterly at **https://navalaviationnews.navy.mil/**.

The magazine has published quarterly for the majority of its existence. In 2021, the magazine shifted to become a digital-only publication after supply complications arose during the COVID-19 pandemic. Since then, the magazine has printed a sole physical "Year in Review" special edition to highlight significant milestones in Naval Aviation. The Navy Public Affairs Award judges reviewed and awarded the 2023 Year in Review edition.

"It's a tremendous honor to be recognized by the Navy," Byrd said. "I feel it's a reflection on the great group of people that works on the NAN, from the writers and photographers who provide the source material, to the NAN staff that pulls it together and presents it in a way that really strikes a chord with the warfighters in the Naval Aviation community and our other readers. Our editors and Editorial Board are amazing, as is the NAVAIR Command Comms team that disseminates and promotes the magazine. I think the award is an acknowledgement of that whole team."

"The Naval Aviation News team's outstanding dedication and excellence in storytelling have earned them first place in the NPAA Awards—a well-deserved recognition of their commitment to delivering impactful and engaging content," said Marcia Hart, public affairs officer for NAVAIR Command Communications. "The team's ability to highlight Naval Aviation's mission, people and achievements with clarity and professionalism continues to set the standard for communication across the fleet and externally. Congratulations on this incredible accomplishment!"

Editor's Choice

There is not an aircraft or aviator in sight for this one, but the lessons from "Turn the Ship Around: A True Story of Turning Followers into Leaders" cross the boundaries of role and service.

In this book, Capt. L. David Marquet tells the story of his leadership successes and failures at various points of his career, and how his leadership style evolved as time went on. Culminating with his time as captain of the Los Angeles-class fast-attack submarine USS Santa Fe (SSN 763), he frames and focuses the story on his use of a "Leader-Leader" style to encourage his Sailors to take ownership of their particular area of expertise. That intentional and aggressive delegation ultimately resulted in improved morale and performance. Marquet notes the difficulty not only in changing the ship's organizational culture, but also the internal struggle to change his leadership style to the one he wanted. At one time included on the Chief of Naval Operations' and a slew of other reading lists, this volume is well worth your time.

—David Byrd, Editor in Chief

Turn the Ship Around: A True Story of Turning Followers into Leaders

By L. David Marquet, Portfolio Penguin, 2015.

Review by Madilynn Hershberger

People often turn to books to learn about leadership and participate in high-minded debates at their book club about what new personality quiz will unlock the secrets of why a team is falling behind or review the best new organizational structure will fix all their problems. While the concept Navy Capt. L. David Marquet explores in "Turn the Ship Around" is not entirely new, his approach takes aim at aspirations discussed in many leadership books and puts them to the test in a real-world environment. He takes the true story of his failures, his trials and his successes and presents them in actionable ways, making them relevant well beyond his operating environment. "Turn the Ship Around!" does far more than discuss the theory of leadership; it puts it into perspective, and it lets us into the author's head as he grapples with all the decision points and uncertainties that come with shifting the paradigm of leadership.

But how do you develop a leader? Is it something you are born with or is it something you learn? On that topic, what even defines a leader and how do we reinforce that construct in our society? Marquet opens with a detailed exploration of leadership constructs as they existed when he was a department head on USS Will Rogers (SSBN 659) in 1989. He details the frustration with the traditional top-down leadership style within the Navy,

USS Santa Fe (SSN 763) sails in formation with Royal Australian Navy submarines HMAS Collins, HMAS Farncomb, HMAS Dechaineux and HMAS Sheean, Feb. 15, 2019.

Royal Australian Navy photo by LSA Ian Gollop

U.S. Navy Photo by MC1 Daniel Hinton

Los Angeles-class fast-attack submarine USS Santa Fe (SSN 763) and its crew arrive at Joint Base Pearl Harbor-Hickam, after completing their latest deployment, April 22, 2019.

dubbing it a "Leader-Follower" style, the overwhelming responsibility it places on the leader and the complacency it forces on the followers. With a single point of failure for all decisions made on the submarine, the crew lacked ownership of their work. This style requires leadership to be an expert in all elements of every job, a feat that is not often reasonable to attain. And most critically, the awards and promotional system valued short-term results by assessing effectiveness during a captain's tenure rather than over long periods of time. This limited any one captain's desire to complete systematic changes that ensured an enduring quality of service past their service.

Several years later, as the commanding officer onboard USS Santa Fe (SSN 763), Marquet invites us to consider the "Leader-Leader" style. Leader-Leader pushes decision-making authority to the lowest possible level that it resides with the relevant expertise. It encourages vocal accountability at all levels by discouraging blind obedience. It establishes the concepts of declarations of intent and learning to respond to mistakes that treat the source of an issue. It elevates education and curiosity at every level. And, most important, it provides concrete examples of all these elements in action.

The key to ensuring the Leader-Leader style succeeds in changing your organizational culture is to embrace the various "Mechanisms for Control, Competence and Clarity" he references throughout the book. Examples include "Embracing the Inspectors, Establishing Guiding Principles for Decision Criteria, Building Trust and Taking Care of Your People, Specifying Goals Not Methods, Continually and Consistently Repeat the Message, and Taking Deliberate Action." Through each of these mechanisms, Marquet sought to build a curious and engaged team, balancing accountability with compassion, and ensuring every member of their the crew not only also knew where they fit in on the boat but were aware of the effects of their individual contributions to the whole.

Throughout the book, Marquet internally struggled with his decision to turn leadership on its head aboard Santa Fe. He often found himself defaulting back to wanting to give orders, desiring a faster decision-making process than the situation warranted. However, as he often reflects when these urges hit him, if he had, the crew's ownership and creativity in their decision-making would have been stifled and the ultimate, long-term reward of a consistently successful submarine long after Marquet vacated his role would never be achieved. Even as a firm believer in the concept, Marquet said it was still a struggle to shift the paradigm and the culture even within himself.

Marquet leaves us with a compelling series of true stories from his time onboard Santa Fe. He shares his moments of failure and the steps he took to correct himself. He shares his crew's successes and the moments they inspired him to keep striving toward his goal of a leader-leader dynamic. Most importantly, Marquet leaves us with an actionable account of how he took a submarine with notoriously low promotion and re-enlistment rates to one known for having the best leadership culture in the Navy. He takes us beyond the theory and leaves us with real-world implementations to better empower and engage our workforce and train our future leaders, a far more actionable plan than any personality quiz.

Madilynn Hershberger is a lead interoperability engineer at Naval Air Warfare Center Training Systems Division.

MARINES, AIR FORCE FIGHT AS
IN NAVY'S JOINT SIMU

An F-35B Lightning II touches down during the aircraft's first landing on Marine Corps Air Station New River, North Carolina, September 2019.

By Naval Air Warfare Center Aircraft Division Public Affairs

For the first time, Marine Corps F-35 Lightning II and Air Force F-22 Raptor pilots trained as a joint fighting force March 24-27 in the Naval Air Warfare Center Aircraft Division's (NAWCAD) Joint Simulation Environment (JSE) at Naval Air Station Patuxent River, Maryland.

The training event brought eight Marine Corps F-35s to train alongside four Air Force F-22s in the DOD's most advanced digital test and training range.

"This milestone is a game-changer that ushers in a new era of interoperability for aviation's combat community and served as a pivotal exercise getting NAWCAD ready to make this joint training standard for Navy and Air Force fighters starting this spring," said NAWCAD Commander Rear Adm. John Dougherty IV.

During the event, F-35B and F-35C pilots from Marine Fighter Attack Squadrons (VMFA) 122, 225 and 311 trained with several F-22 pilots from the Combat Air Forces and test community. Over two days, F-35 and F-22 pilots practiced fifth-generation fighting together in 17 simulated combat missions against advanced enemy threats only available at JSE. After each mission, the pilots reviewed their performance using cockpit video and audio recordings.

"The cross talk [while training in the JSE] is unparalleled in terms of being able to talk tactics [and] actually get in the same room with people," said F-22 pilot Capt. Brett Myer. "It helps iron out a lot of the small details that really matter when it comes down to it."

Real-world training on open-air ranges at this scale is expensive, difficult to coordinate and lacks a realistic threat environment. The JSE solves this problem by providing defense aviation a secure simulated range that puts pilots in threat environments not replicable in real life.

"At the end of the day, it's going to be the people that win our nation's wars," said VMFA-225 pilot Maj. Patrick Kaufer. "Having those person-to-person connections between the Air Force, the Navy and the Marine Corps [in the JSE] is the most important part and biggest objective that we're able to achieve."

Developed by NAWCAD engineers and industry partners, the JSE is a digital training and test facility that features realistic domed simulators with actual defense hardware, software and adversary aircraft. The immersive environment enables pilots flying F-35 and F-22 to practice complex combat scenarios and receive instant feedback, accelerating the learning process and honing their skills. Tactical groups training in the JSE fly more sorties in one week than they fly over a year on open-air ranges.

NAWCAD's JSE is formally integrated into the Navy's Strike Fighter Tactics Instructor Program—commonly known as TOPGUN—and efforts are underway to incorporate JSE training across additional warfighter programs.

JOINT FORCE FOR FIRST TIME

LATION ENVIRONMENT

An F-22 Raptor assigned to the 1st Fighter Wing, Joint Base Langley-Eustis, Virginia, arrives at Royal Air Force Lakenheath, England, October 2018.

U.S. Navy photo illustration by Fred Flerlage

NAWCAD will expand JSE's capabilities with the addition of a highly realistic E-2D Advanced Hawkeye this year, and the F/A-18 Super Hornet and EA-18G Growler next year.

NAWCAD's military, civilian and contract personnel operate test ranges, laboratories and aircraft in support of test, evaluation, research, development and sustainment for all Navy and Marine Corps aviation platforms. Based in Patuxent River, Maryland, NAWCAD also has major sites in St. Inigoes, Maryland; Lakehurst, New Jersey; and Orlando, Florida.

From Naval Air Warfare Center Aircraft Division Public Affairs.

A pilot trains in the Joint Simulation Environment (JSE) at the Naval Air Warfare Center Aircraft Division in Patuxent River, Maryland. Tactical pilots from the Marine Corps and Air Force conducted the first joint training exercise flying simulated combat missions together in F-35 and F-22 fifth-generation fighter jets in the JSE March 24-27.

U.S. Navy photo by Terri Thomas

Navy Celebrates 80 Years of Flight

By Lindsay Wooleyhand

During World War II, in the early days of military aerospace test and evaluation, before formal test training regimens existed, military aviators had an average life expectancy of less than nine weeks—those who survived earned the esteemed title of test pilot.

Since its inception in 1945, the U.S. Naval Test Pilot School (USNTPS) has been at the forefront of teaching flight test and evaluation. It cultivates an exceptional cadre of elite multi-domain aerospace test professionals, including industry and foreign partners, tasked with evaluating and fielding the most advanced aerospace technologies.

What began as a necessity in the post-World War II era evolved into a rigorous and dynamic institution which is not only vital to U.S. military aviation but has also influenced aerospace development worldwide. During the past 80 years, USNTPS has trained more than 4,800 students from no fewer than 17 countries and operates 48 aircraft representing 14 type/model/series—more than any other squadron in the Navy. The school revolutionized Naval Aviation by setting a new standard for flight test education—one rooted in safety, innovation and cutting-edge techniques—to conduct full-spectrum test and evaluation of aircraft and airborne systems.

Prior to the creation of USNTPS, flight test and evaluation in the Navy was informal, with volunteer test pilots and flight test engineers, relying on little more than skills and bravery. Early test pilots were responsible for evaluating, modifying and delivering new aircraft, with survival alone sometimes earning them the

U.S. Navy photo

A TA-4J Skyhawk attack aircraft sits in front of the U.S. Naval Test Pilot School (USNTPS).

Test at U.S. Naval Test Pilot School

title of test pilot. The system left considerable room for improvement.

"The early days were a lot more about a pilot's willingness to test than formalized training," said Rich Harris, a curriculum liaison and retired U.S. Naval special warfare combat crewman serving USNTPS since 2007. "We joke about how someone would walk into a room full of pilots and ask, 'Who wants to try out the new airplane?' If they survived, they became a test pilot. That's not really the way it worked, but it usually did involve on-the-job-training and the need to formalize that training became increasingly more apparent."

In early 1945, Cmdr. Sydney Sherby led the committee to recommend a course of instruction for Navy flight test pilots at the Navy's Flight Test Center—what is now the Naval Air Warfare Center Aircraft Division—at Naval Air Station (NAS) Patuxent River, Maryland. In response to the growing need for well-trained test pilots, and with Sherby's help, the Navy established what was then known as Flight Test Pilots' Training Program on March 12, 1945, which would later become the U.S. Naval Test Pilot School in 1958.

Aiming to create a formalized education system that prepared aviators for the complex demands of flight test, the program's mission was clear: to properly train newly assigned pilots and enhance the expertise of those already in service. Pilots and engineers needed the knowledge and tools to test, evaluate and improve aircraft systematically. They had to return from flights not only with suggestions for

"We joke about how someone would walk into a room full of pilots and ask, 'Who wants to try out the new airplane?' If they survived, they became a test pilot."

U.S. Navy photo by Adam Skoczylas

Senior instructor Dr. Vernon Gordon, right, leads an Oct. 3, 2018, class at USNTPS at Naval Air Station Patuxent River, Md. The 11-month curriculum includes 530 hours of academic instruction in fixed-wing, rotary-wing and airborne/unmanned systems.

U.S. Navy photo

The school operates two U-6A Beavers as part of the Qualitative Evaluation program, which exposes students to the handling characteristics of a wide variety of unique aircraft.

U.S. Navy photo by Erik Hildebrandt

The backbone of jet training at USNTPS, the two-seat T-38 Talon is used to train students in a number of roles, including aircraft handling and flight characteristics, transonic performance and system integration. Primarily flown by the U.S. Air Force, USNTPS currently has 10 T-38Cs.

improvements, but also with the ability to articulate the reasoning behind those changes—they needed the what, the how and the why.

This focus on real-world application continues today, as a rapidly changing technological landscape leads to changing requirements prioritized based on cost, schedule and mission performance.

"That's where pilots and engineers come in," Harris said. "They figure it out. It all comes back to what the fleet needs, which is why USNTPS relies on fleet aviators. Fleet experience is real-world, hands-on experience, not just theoretical. It allows us to go back to the pilots and ask, 'How is this system actually working?'"

Since the institution's inception, USNTPS continually evolves. What started as a 12-week night school transformed into a full-time, yearlong program that incorporates both theoretical and hands-on training. This shift reflects the growing complexity of aviation technologies and the increasing demand for skilled testers. USNTPS has adapted by bringing in new content, incorporating advanced simulation tools and adding field-based experiences that prepare its graduates for the pressures of modern Navy and Marine Corps aerospace test programs.

"We emphasize the mindset," said

February 21, 1945: Cmdr. Sydney Sherby establishes a committee to recommend a formal education program for flight test pilots and engineers in the Navy.

March 12, 1945: Fourteen pilots and engineers convene the first class of the U.S. Navy's new Test Pilot Training Division.

October 3, 1953: Cmdr. James B. Verdin (Class 8) sets a world record for speed flying an F-4D Skyray.

1954: Members of Classes 8 and 9 participate in first trials of an angled aircraft carrier deck, steam catapult and the Mk-7 arresting gear—innovations that fundamentally changed the nature of carrier aviation.

August 1957: Royal Air Force Flying Officer Sidney Hughes conducts the first planned low-altitude ejection from a Martin-Baker Mk-5 ejection seat aboard a Grumman F9F-8T Cougar at NAS Patuxent River.

1958: The Test Pilot Training Division is renamed the U.S. Naval Test Pilot School (USNTPS).

1961: USNTPS creates a separate rotary wing curriculum.

May 5, 1961: Alan B. Shepard Jr. (Class 5) becomes the first American in space during his 15-minute, 302-mile suborbital flight in the Mercury spacecraft Freedom 7.

1945 1950 1960

Cmdr. Travis Hartman, commanding officer and USNTPS alumnus. "We don't just teach a process—we teach students to be master thinkers, capable of solving complex, ill-defined problems under pressure while fielding suitable solutions within time and budget constraints. Because of this, our graduates become very adaptable."

According to Hartman, a cornerstone of USNTPS's success is its approach to education. Unlike traditional academic programs, the balanced focus is also on developing master practitioners. These students, who will go on to execute high-stakes flight tests, are prepared not only to assess aircraft but to make recommendations that impact actual missions and save lives.

"We aren't just teaching theory. Our students will go on to be the ones executing the test plans and maneuvers. The stakes are incredibly high."

U.S. Navy photo

USNTPS F/A-18F Super Hornets fly over NAS Patuxent River, M.

USNTPS flies five UH-60L helicopters, four of which have a variable stability system (VSS) which effectively turns the helicopter into a flying simulator, allowing instructors to change the aircraft's flight characteristics in real time; students can then experience flight behavior they previously only learned in the classroom.

U.S. Navy photo by Erik Hildebrandt

Oct. 11, 1968: Wally Schirra (Class 8) and two crewmates make the first crewed flight of the Apollo moon-landing program. Apollo 7 goes on to make 163 orbits around Earth over 260 hours and 9 minutes of flight.

October 1970: Class 58 welcomes foreign partner pilots from Italy, Japan and Australia.

June 1975: USNTPS moves to Hangar 110, adjacent to the Naval Air Test Center's rotary-wing hangar. The move consolidates the school's flying and academic work for the first time.

Dec. 10, 1982: Gina Moy (Class 82) becomes the first female civilian aeronautical engineer to graduate from USNTPS.

June 1983: Lt. Colleen Nevius (Class 83) becomes the first female naval aviator to graduate from USNTPS.

1970 1980

U.S. Navy photo by Erik Hildebrandt

The T-6B Texan II, built by Textron Corporation, is a tandem-seat, turboprop trainer whose mission is to train Navy and Marine Corps pilots and flight officers. USNTPS has been flying the Texan II since 2010.

U.S. Navy photo by Erik Hildebrandt

USNTPS uses the Vietnam-era OH-58C Kiowa for rotary-wing training. USNTPS is the only U.S. military institution with a formal rotary-wing curriculum and the only test pilot school in the world with a dedicated airborne systems curriculum.

"Being a part of USNTPS means that the instructors, as well as the students, have skin in the game," Hartman said. "We aren't just teaching theory. Our students will go on to be the ones executing the test plans and maneuvers. The stakes are incredibly high."

This commitment to real-world application is at the heart of what sets USNTPS apart.

This hands-on approach is further enriched by the school's varied international presence, which adds a global dimension to its training. With students from 17 allied nations, each brings unique experiences that contribute to the breadth and depth of the program. In partnership with the three other major test pilot schools, the Navy and Marine Corps select officers to attend and instruct at the Empire Test Pilots' School in Boscombe Down, United Kingdom; the École du Personnel Navigant d'Essais et de Réception (EPNER) in Istres, France; and the U.S. Air Force Test Pilot School at Edwards Air Force Base, California. This exchange of knowledge, coupled with the varied backgrounds of the students and instructors, adds an invaluable holistic perspective to the schools.

Additionally, USNTPS partners with the U.S. Army, serving as its test

January 28, 1986: Michael Smith (Class 66) perishes along with six crewmates aboard the space shuttle Challenger after its explosion shortly after launch.

June 1994: Twins Mark and Scott Kelly (Class 105) graduate from USNTPS. The "NASA Twins" are the first and only set to travel to space to date. The brothers served as subjects for research on the effects of space travel on the human body when Scott spent an additional year in orbit while Mark remained on earth as a control subject.

1996: The first "flying classroom," a modified P-3C Orion, dubbed the Airborne Systems Testing and Research Support (ASTARS) aircraft, goes into service at USNTPS, enhancing airborne systems training for test pilots under instruction.

February 2003: The Outstanding Student Award is renamed in honor of Cmdr. Willie McCool (Class 101) following his death. McCool perished alongside his six crewmates when the space shuttle Columbia disintegrated reentering Earth's atmosphere from orbit.

Jan. 13, 2005: Col. Steve Kihara becomes USNTPS' first commanding officer from the U.S. Army.

1990 2000

pilot school, which also strengthens the school's training environment. The Army sends 10 to 11 pilots and engineers annually to attend USNTPS, providing instructors, aircraft and a rotation of leadership, including the roles of executive officer and commanding officer. This inter-service collaboration contributes to the program's well-rounded training and prepares students to work across multiple branches of the military.

This collaboration is just one example of how USNTPS's influence extends beyond its immediate schoolhouse. The school's impact on flight test education in Naval Aviation is far-reaching and enduring. USNTPS graduates, including nearly 100 who have become astronauts, have played a crucial role in the development and deployment of major technologies. The test pilots, engineers and leaders trained at the school continue to shape the future of military aviation, tackling complex problems and pushing the boundaries of technology. From aircraft to weapons systems, to sensors and links, the minds trained at USNTPS have shaped the very technologies that keep the U.S. military at the forefront of global defense.

"Our graduates have been integral to the success of every major Navy and Marine Corps aerospace technology since

U.S. Navy photo

USNTPS has been flying the F/A-18 Hornet since 1984.

U.S. Navy photo by Erik Hildebrandt

Designed as a multi-mission aircraft to provide high-priority transportation of personnel and cargo, USNTPS uses the twin-engine C-12 Huron "King Air" to train students in flying qualities, flight test techniques and modern avionics systems test.

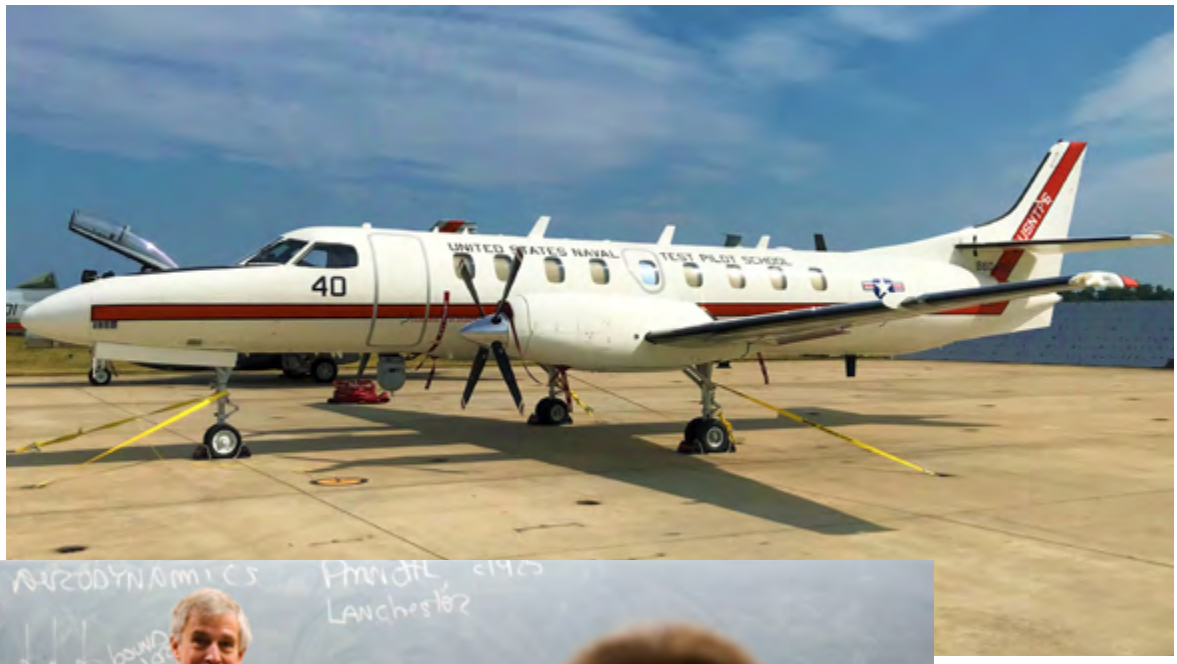
May 2014: First student final project is conducted on a UAS using an MQ-9C Reaper autonomous unmanned aircraft.

November 3, 2014: Cmdr. Tony Wilson (Class 132) makes the first arrested carrier landing flying the F-35C aboard USS Nimitz (CVN-68).

January 2019: Class 156 becomes the first to receive training in unmanned airborne systems as part of its regular syllabus.

80TH ANNIVERSARY 1945 2025 80 YEARS UNITED STATES NAVAL TEST PILOT SCHOOL

2010 2020 2025



A C-26A Metroliner ASTARS III sits on the ramp at Patuxent River, Md. USNTPS uses the aircraft to train students in the Airborne Systems flight test.

U.S. Navy photo

U.S. Navy photo

J.J. McCue, NAVAIR Esteemed Fellow, discusses aerodynamics principles and flight test techniques with USNTPS Class 133.

U.S. Navy photo by Lindsay Wooleyhand

Navy Test Pilots Take Center Stage in

A new exhibit showcasing developmental test pilots, flight officers, engineers and the history and influence of the U.S. Naval Test Pilot School (USNTPS) recently launched in April at the Patuxent River Naval Air Museum.

The exhibit, "80 Years of the U.S. Naval Test Pilot School: Honoring the Past, Inspiring the Future," brings Southern Maryland—home of developmental flight test for the Navy and Marine Corps—an up-close look at the profession of flight test and the training institution where it all starts.

"USNTPS transformed flight test education and inspired generations of leaders who push the boundaries developing Navy and Marine Corps aerospace technology," said USNTPS Commanding Officer Cmdr. Travis Hartman. "This exhibit is a tribute to that legacy and looks forward to the future of aviation innovation. We are excited to share this with visitors and, hopefully, future testers."

"The U.S. Naval Test Pilot School's legacy is one of excellence, innovation and adaptability—values that continue to guide the school as it celebrates its 80th anniversary and looks toward the future."

U.S. Navy photo

Primarily used by the U.S. Army, the Airbus light-utility helicopter UH-72A Lakota also serves to train USNTPS students in rotary-wing performance and flying qualities. It has served in that capacity since 2009.

the end of World War II," Hartman said. "They've played a role in developing and fielding the systems that have kept this nation safe. That legacy continues to this day."

The U.S. Naval Test Pilot School's legacy is one of excellence, innovation and adaptability—values that continue to guide the school as it celebrates its 80th anniversary and looks toward the future. Whether training the next generation of test pilots or collaborating with global partners, USNTPS remains a critical force in advancing military aviation technology and preparing aviators and engineers to push the boundaries of what is possible, while serving as a testament to the importance of structured, yet dynamic, flight test education.

As Hartman puts it, "As an institution, we're always changing because our field of expertise is always changing as technology advances. We're never static. Our history of dynamism has kept this institution relevant for 80 years, with the minds we've trained going on to develop the technologies that have kept this country safe. Our mission remains the same: to continue teaching the minds that will shape the future of aviation."

Lindsay Wooleyhand is a strategic communications specialist with the U.S. Naval Test Pilot School.

New Exhibit at Patuxent River Naval Air Museum

Through a series of engaging displays, visitors learn about the critical and sometimes dangerous role developmental test pilots, flight officers and test engineers play in early aircraft and subsystem development. The exhibit highlights key milestones of USNTPS' historical development and provides insight into test pilot student life, including its demanding curriculum that shapes the aviation industry's cadre of flight test professionals. Designed to inform and inspire future talent, the exhibit aims to spark curiosity and ambition in aspiring test pilots and future aerospace professionals.

USNTPS is an institution recognized worldwide for its rigorous academic program and excellence in developmental flight test training, serving test pilots across all military services and many international partners. The Navy's test pilot school also serves as a dedicated test training institution for the U.S. Army and has graduated nearly 100 NASA astronauts to date, including John Glenn, Alan Shepard and Wally Schirra.

The exhibit was developed in partnership with the Naval Air Warfare Center Aircraft Division (NAWCAD), parent command to USNTPS. The school is a first stop for most of NAWCAD's developmental test pilots and flight officers before they begin assignments testing aircraft at one of six developmental test squadrons.

The exhibit is open through 2026.

NAWCAD operates test ranges, laboratories and aircraft in support of test, evaluation, research, development and sustainment of everything flown by the Navy and Marine Corps. Based in Patuxent River, Maryland, the command also has major sites in St. Inigoes, Maryland, Lakehurst, New Jersey and Orlando, Florida.

From Naval Air Warfare Center Aircraft Division Public Affairs.

NPS, TOPGUN Launch New Master of Warfare Operations Degree

By Seaman Apprentice Abreen Padeken

In Naval Aviation, the best of the best attend the U.S. Navy Strike Fighter Tactics Instructor Program, otherwise known as TOPGUN, where they hone their warfighting skills as combat pilots. Starting this year, some will also sharpen their critical thinking proficiency by earning their Master of Warfare Operations (MWO) graduate degree.

The Naval Postgraduate School (NPS), in partnership with the Naval Aviation Warfighting Development Center (NAWDC) at Naval Air Station Fallon, Nevada, launched the new MWO degree program initially to a select cohort of TOPGUN students and instructors designed to meet the unique needs of aviators in a very compressed career pipeline.

Navy Lt. Matt Haney, an instructor at the airborne electronic attack weapons school HAVOC at NAWDC in the EA-18G Growler, signed up eagerly up for the MWO program.

"I jumped on the opportunity as soon as it was announced that my experience as an EA-18G weapons tactics instructor would be considered for inclusion in the program," said Haney, who has been at HAVOC for two years. "Thus far, I can easily say that the content gives me a much-appreciated view on strategic competition, and I am looking forward to the other certificates in the program as well. From an accessibility perspective, I am optimistic to see how this goes as I rotate back to a deployable command, but the allowed timeframe of the program [five years] does keep me confident that I will be able to finish even if I am forced to take a break."

Graduates of approved warfare/weapons tactics instructor (WTI) programs receive equivalency for up to 25 percent of course credits required for the MWO degree. Haney was appreciative of the WTI credit and said he believes the program has the potential to benefit any interested military officer, "particularly those of us who need a more global perspective to support our very focused daily work."

Readiness requirements have rigorous demands, which limit operators' ability to attend NPS programs in residence. MWO was developed by a team of NPS faculty as an innovative, asynchronous, distance-learning curriculum with stackable certificates to provide flexibility and delivery at the point of need for warfighters—an objective of the Naval Education Strategy.

"This program was built to meet the educational needs of the Navy's Strategic Education Alignment (SEA) Plan," said NPS Department of Physics Professor Joseph Hooper, Ph.D., who was involved in developing the MWO degree. "As a pilot or as a surface warfare officer headed for command, you don't necessarily need a highly specialized technical degree. This is going to be something that would be a better, relevant fit for a warfighter needing an interdisciplinary perspective."

To accelerate educational availability for service members, NPS faculty and associates garnered support from Navy senior leaders in the Pentagon to develop the MWO program. With word spreading quickly, officials are looking for avenues to expand the program as demand has increased among other warfare communities.

A Navy E/A-18G Growler assigned to Naval Air Station Fallon, Nevada, takes off for a Weapons School Integration mission at Nellis Air Force Base, Nevada, May 29.

"The MWO program provides the opportunity we need to augment operational assignments with relevant knowledge, while gaining the strategic insight necessary for effective command and senior leadership," said Vice Adm. Dan Dwyer, Deputy Chief of Naval Operations for Operations, Plans, Strategy and Warfighting Development (OPNAV N3N5N7), who oversees shaping the Navy's education system, managing the resources the policies that support the professional development of Navy personnel. "NPS is right on target with the MWO program, creating an advanced education program with the flexibility for officers to further their knowledge for warfighting advantage while balancing their operational commitments."

The MWO program complements what a WTI learns by adding context covering advanced topics such as strategic competition, combat systems analysis and statistics, naval tactics and technologies, and space systems fundamentals.

"Unrestricted line officers, particularly those who are WTIs, have a proven track record of excellence in the classroom and in their platforms and are trusted to provide academic and technical expertise and rigor in their communities," said Jennifer Barkley, a former naval aviator and current academic board member for the MWO program. "Many currently wait to obtain a degree until much later in their careers, or they pay out of pocket, sometimes with the help of tuition assistance, for other less relevant universities. I wish I had this when I was flying."

Participants in the MWO program will also explore a range of critical topics, including unmanned autonomous systems, orbital mechanics and U.S. space policy, while simultaneously gaining a deeper understanding of the political dynamics and strategic ambitions of key global adversaries affecting warfare planning and operations.

TOPGUN is not limited to fighter attack aircraft. Lt. John

The ramp and runways of NAS Fallon, March 2025.

U.S. Navy photo illustration by Fred Flerlage

"The MWO program is an example of how NPS is responsive to the evolving requirements of the fleet for graduate education. The demand signal for stackable certificate programs is high. NPS is working toward offering the MWO program for WTIs across the fleet with the added benefit of spurring along cross-domain dialogue needed to realize desired impacts on warfighting outcomes."

Hartsough is an MH-60R helicopter pilot teaching at the SEAHUNTER portion of NAWDC. Hartsough is in the same cohort as Haney and agrees that once he saw the degree program contents at NPS Online, he saw "how helpful it could be in our careers."

"Being able to recognize geopolitical events and tensions building between countries is appealing for a leader in our respective aircraft communities, and really any community," Hartsough said. "The other big piece is the space-based technology classes that are very relevant with where major conflicts with near-peer/peer adversaries would be fought over in the future."

Overall, Hartsough said he thinks the MWO program provides a great foundation for WTI officers returning to the fleet with immense knowledge and expertise in not only their tactical area, but warfighting as a whole.

"There is an added benefit of getting to work and study with all the other weapons schools and understanding their piece as well, which allows the building of a more accurate bigger picture in the grand scheme of things," he said.

Graduates of the program will possess advanced expertise across multiple domains of naval warfare and be equipped to evaluate contemporary warfare from a multidisciplinary perspective, using cutting-edge methodologies.

"The MWO program is an example of how NPS is responsive to the evolving requirements of the fleet for graduate education," said NPS Vice Provost for Academic Affairs Dr. Bret Michael. "The demand signal for stackable certificate programs is high. NPS is working toward offering the MWO program for WTIs across the fleet with the added benefit of spurring along cross-domain dialogue needed to realize desired impacts on warfighting outcomes."

Vice Provost for Warfare Studies at NPS, retired Marine Corps Col. Randy Pugh, helped develop the original MWO concept and was pleased to see it accredited and launched this year.

"Future wars, especially the highly complex and technical wars against peer nations that the United States faces, are ultimately going to be won by the side that thinks smarter and faster than the other side," Pugh said. "Complementing exquisitely skilled warfighter WTIs with NPS-provided relevant knowledge about strategy, operations analysis and technical capabilities is going to go a long way toward preserving our traditional advantages of decision superiority and cognitive overmatch. Delivering this instruction directly to the fleet ensures our operating forces are highly educated and ready to deploy on a moment's notice at the same time."

Seaman Apprentice Abreen Padeken is a communications specialist for the Naval Postgraduate School.

Photo courtesy of Lt. Matt Haney

Navy Lt. Matt Haney prepares to fly the EA-18G Growler at Naval Aviation Warfighting Development Center (NAWDC).

TWO GENERATIONS INSPIRED BY TACAMO MISSION

A routine site visit to Oklahoma's Tinker Air Force Base turned into a unique multi-generational moment for Navy Capt. Adam Scott and his son Lt. j.g. Andrew Scott. The pair shared the cockpit of an E-6B Mercury simulator, executing the Take Charge and Move Out (TACAMO) mission—the first and only opportunity for them to collaborate on this vital operation.

A Boeing E-6B Mercury sits on the flightline February 2019 on Vandenberg Air Force Base, Calif.

U.S. Navy photo illustration by Fred Flerlage; imagery by U.S. Air Force photo by Airman 1st Class Hanah Abercrombie

Legacy of Dedication to the TACAMO Mission

Capt. Adam Scott has dedicated over 20 years of his 30-year Navy career to the TACAMO mission, managing strategic airborne command and communications programs. His son recently began supporting the TACAMO mission with Fleet Air Reconnaissance Squadron (VQ) 7, contributing to critical communication links for U.S. Strategic Command's nuclear missile units.

"It was really great to see my son enjoy flying an aircraft that has been such a central part of my career and to see that the next generation is ready to perform the nation's most important mission, deterrence," said Scott, who began at Tinker AFB in 1997 working on the same mission as his son is today.

"TACAMO has evolved over 30 years; the mission and the aircraft has advanced even while facing sustainment challenges. However, there is never a moment that the president is not constantly connected to the Nation's Nuclear Triad."

During his visit to Tinker AFB, Scott led discussions, toured facilities and revisited flying the E-6B simulator, with his son guiding him through the exercise. This unique experience showcased the generational evolution of the TACAMO mission, as Andrew continues his father's legacy of deterrence and national security.

"The last time I flew the E-6B was in 2011. I was a bit rusty," said Scott, who retired from the Navy in June. "What made this a once-in-a-lifetime opportunity is that my son was able to showcase what he's learned and I understood his journey having made it myself. His skills showed me the simulator and VQ-7 instructors continue to excel in training young aviators to fly the E-6B aircraft."

U.S. Navy photo

Lt. j.g. Scott (left) showcases his knowledge to his father, Capt. Scott (right), in the E-6 simulator at Tinker Air Force Base.

Training Excellence at Tinker AFB

The base is home to two E-6B Operational Flight Trainers (OFTs). Installed in 1992, they have since been the cornerstone of all pilot and flight engineer training for the TACAMO mission. The two E-6B OFTs are used for 24 initial qualification (IQ) pilots and 12 IQ flight engineer students per year, as well as a dozen previously qualified pilots for re-qualification training. A key part to keeping pilots ready and trained, these OFTs are also used to provide all community pilots and flight engineers with normal and emergency training on a quarterly basis.

Despite their age, Tinker's two OFTs have been routinely upgraded to match the configuration and flying qualities of the E-6 aircraft for over three decades. Both trainers provide reliable, realistic and up-to-date training for the Mercury mission 24 hours a day, seven days a week, 365 days a year.

TACAMO has evolved over 30 years; the mission and the aircraft has advanced even while facing sustainment challenges. However, there is never a moment that the president is not constantly connected to the Nation's Nuclear Triad.

The mission to provide airborne command, control and communications remains steady and reliable in the E-6B. However, it is an aging airframe and to ensure mission coverage, it must be replaced.

TACAMO Mission: Steady but Ready for Evolution

The E-130J, formerly known as E-XX, will replace the aging E-6B Mercury and transition the nation's airborne strategic nuclear command, control and communications (NC3) capability between aircraft with no break in operational coverage. Its mission equipment will be integrated into a Lockheed Martin C-130J-30 Super Hercules aircraft, bringing an updated capability to the warfighter.

"I started my career in Naval Aviation when the E-6 was new to the fleet, and I retired as the program manager of the E-6 and the E-130J aircraft program office," Scott said. "I finished my career by putting the development of the replacement E-6B aircraft on contract, and now my son is starting his career in the TACAMO community. This truly is an evolving mission for me in more ways than one."

Scott most recently led the Airborne Strategic Command, Control and Communications Program Office. On March 21, Scott turned over leadership responsibilities during a change of command ceremony.

The program office's mission is to deliver and support survivable, reliable and endurable airborne command, control and communications for the president, secretary of defense and U.S. Strategic Command. The program's vision is to provide national security and deterrence through assured airborne strategic communications.

From the Airborne Strategic Command, Control and Communications Program Office.

F-35 Work Earns Stammer DOD's Highest Career Civilian Honor

By Tim Gantner

Clint Stammer helps warfighters come home alive. They may never know his name, but their survival depends on his quiet dedication. He is an unsung American hero in the Department of Defense. And he received recognition over a plate of fish tacos.

A U.S. Marine Corps F-35B Lightning II assigned to Marine Fighter Attack Training Squadron (VMFAT) 502, Marine Aircraft Group 11, 3rd Marine Aircraft Wing, prepares to enter a formation as part of Project Legacy off the coast of San Diego, March 4, 2025.

U.S. Navy photo by Rob Grabendike

Clint Stammer (holding medal), F-35 Joint Program Office Electronic Attack & Countermeasures lead, poses with Pat Schuett (far left), Gerardo Garcia (second from right) and Tom Dowd (far right) after an award ceremony at Point Mugu, Calif, April 1.

In late March, between back-to-back meetings at the F-35 Joint Program Office in Crystal City, Virginia, his boss, Colton Dixon, the JPO mission effectiveness lead, pulled Stammer away for a quick lunch.

As they sat down, a colleague approached the table.

"Can I congratulate him?"

"Wait," Dixon said. "Not yet. I haven't told him."

Then Dixon turned to Stammer and broke the news: He had earned the Office of the Secretary of Defense Exceptional Civilian Service Award, the highest honor for a career DOD civilian.

"I felt humbled. I was speechless, which never happens," Stammer said. "It means a lot that people notice the hard work and sacrifices."

On April 1, Stammer accepted the medal in front of family, colleagues and senior leaders at Naval Air Warfare Center Weapons Division in Point Mugu, California.

"Only 10 percent of nominees receive this medal," Dixon said. "He may not wear the uniform, but everything he does has the same lasting impact."

Stammer addressed his teammates and the many others who filled the room.

"I know it's an individual award," he said, "but this feels like a lifetime team award. I hope everyone realizes they're a part of it."

The Exceptional Civilian Service medal captured the moment. But the mission started long before.

For almost 22 years, Stammer has worked behind the scenes on the F-35. He designs systems that boost the aircraft's survivability, deliver better capabilities and help bring aircrews home. But that mission comes at a personal cost: time away from his own crew.

Yet before it became his mission, the call to serve was loud and clear on a Tuesday morning: Sept. 11, 2001.

Stammer was a junior at the University of Colorado Boulder. Like the rest of the country, he watched in disbelief. Smoke. Fire. Towers falling.

His father, a Vietnam veteran and retired farmer, taught Stammer commitment, craftsmanship and a duty to serve. Those values carried him through college, and after 9/11, the surge of patriotism returned. He felt the need to serve.

But when he graduated in 2003, the path was unclear.

The tech industry was still reeling from the dot-com bubble. Jobs were scarce, but defense was hiring. He found a path. Maybe not the one he had planned, but one with purpose.

"I was 25 and didn't really want to enlist at that point," he said. "I decided I'd join the government, give my service and then go find a job."

U.S. Marine Corps photo by Lance Cpl. Jennifer Sanchez

"We are cranking out countermeasure products at an extremely fast pace. We're producing real solutions that directly impact tactics and save warfighter lives."

— Clint Stammer

He joined NAWCWD in August 2003, planning to serve three years.

Three years became five, then 10. Eventually, he decided, "I'll leave when it's no longer fun."

He is still waiting.

Point Mugu, California, he says, might be the Navy's best-kept secret. The work is his lifelong passion. But what sets him apart is his work ethic, rooted in the rich soil of his family's farm just outside Manning, Iowa, population about 1,500.

"Growing up in the 1980s and '90s, you got up before the sun and didn't quit until the job was done," Stammer said. "Everybody pitched in. No excuses. Just results."

He carried that Iowa farm mindset straight into his role at Point Mugu. One year after joining NAWCWD, in 2004, he became a flight test engineer on the F-35 program.

In 2019, he became the F-35 JPO lead for electronic attack and countermeasures. He inherited a jet burdened with inflexible, hard-coded defenses that cost millions to update.

"I helped the Lockheed Martin team make it programmable," Stammer said. "So we could quickly adjust programs and maximize effectiveness."

This programmability allowed countermeasures to be updated independently from the jet's core software, making updates and tests faster and simpler. The redesign led to a formal DOD program and was one of the first upgrades delivered under the Block 4 modernization effort.

The impact was immediate. Stammer's redesign shaved 45 weeks off complex schedules and saved at least $10 million for each countermeasure type integrated.

Stammer also led efforts to replace the F-35's specialized flare with a more common and cost-effective alternative. The change could save $2-6 billion over the life of the program, double the number of available countermeasures and enhance survivability through greater operational efficiency.

"I applied what I've learned from 20 years with other aircraft and leaned on the experts I talk to daily," Stammer said. "It wasn't a revolution, but it worked."

Beyond cost savings, Stammer tackled another critical mission: defending against advanced radar threats.

A countermeasures virtuoso with a visionary mindset, he saw the need for global collaboration. Therefore, he created the Jamming and Countermeasures Center initiative, known as the JCC.

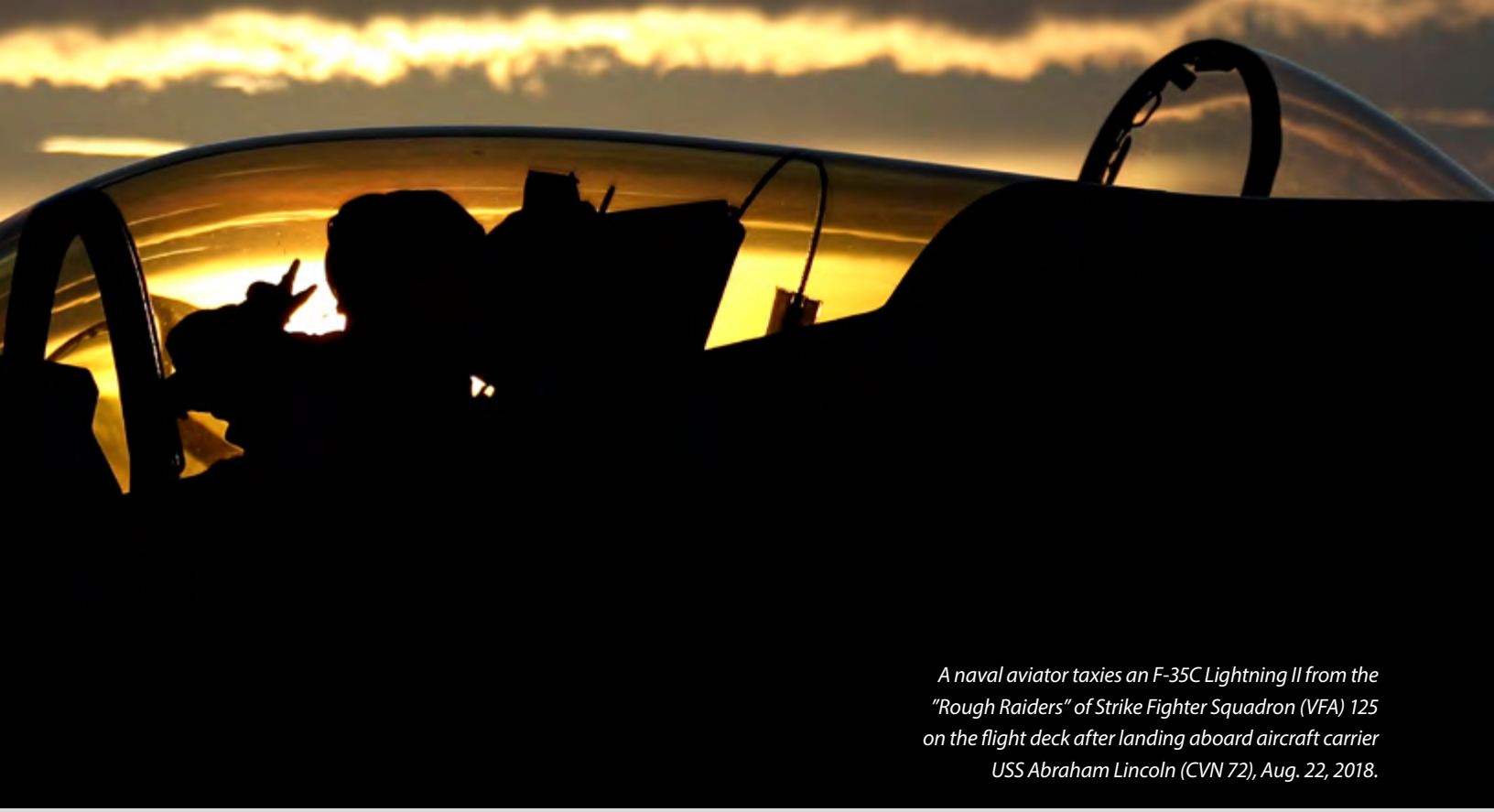
Even before the JCC doors officially opened, he leveraged international teamwork to integrate BriteCloud 218 into the F-35. Developed in the United Kingdom and officially designated AN/ALQ-260(V)1 in the United States, research to integrate BriteCloud into the F-35 began at the JCC in 2022.

"Working on BriteCloud has been 90 percent of my work over the last couple of years," Stammer said.

About the size of a soda can, BriteCloud electronically mimics aircraft radar signatures, diverting enemy missiles. Once launched, it transforms into a phantom jet, buying aircrews precious seconds to evade danger.

Stammer drove the rapid effort to identify, test and field the system. His team took it from initial requirement to the fleet in less than two years. Completed in September 2023, the system now protects U.S. and allied aircrews worldwide.

BriteCloud was not the JCC's only success. When another critical threat emerged, he put the JCC into action. He brought together the brightest minds



A naval aviator taxies an F-35C Lightning II from the "Rough Raiders" of Strike Fighter Squadron (VFA) 125 on the flight deck after landing aboard aircraft carrier USS Abraham Lincoln (CVN 72), Aug. 22, 2018.

U.S. Navy photo by MC3 Jeff Sherman

from the United States, the United Kingdom and Australia inside a Point Mugu lab—and locked the door with one clear mission.

"Let's create a solution for this one threat," Stammer told them.

This small band of experts cracked it in three days in a world where solutions can take years.

They did not need more money, meetings or time. Just a lab, a mission and the right team. Like the Wright brothers, they solved a complex problem while Samuel Langley's team remained stuck planning.

"What we did in those three days is greater than most teams can do," Stammer said. "Because it was 100 percent collaboration."

Today, that teamwork continues within the fully operational JCC. It is the primary development space for BriteCloud and other survivability systems.

"We are cranking out countermeasure products at an extremely fast pace," Stammer said. "We're producing real solutions that directly impact tactics and save warfighter lives."

What started as a tri-service initiative grew into a partnership among the United States, United Kingdom, Australia and Canada.

"He's assembled a team of juggernauts," Dixon said. "And we're looking to add more countries."

The JCC shapes tactics and delivers systems at speed to the fleet. But it is more than a building.

"It's a concept. It's collaboration, working with the world's experts, our partners," Stammer said. "It's the way forward. It's how we're going to win."

But delivering life-saving countermeasures comes with a personal cost: time away from home.

At the ceremony, Stammer wore a black suit, burgundy tie and flag pin. His wife, Tanya, and their three sons stood beside him. Matching suits. Matching ties. The youngest in a bow tie.

"I know I'm on the road a lot," Stammer said. "But thank you. I hope you see it makes a difference."

That is the team Stammer does it for. He cannot always be there, so he makes every moment count.

Dixon spoke and looked at Tanya and the boys. "You should be proud. Your husband and dad is a hero. We take him away often. Thank you for sharing him."

One of Stammer's greatest honors is briefing weapons schools, stepping into rooms full of flight suits, explaining threats, sharpening tactics and giving pilots a fighting chance to get home.

His mother, a retired teacher, taught him the value of clear communication and giving back through teaching others.

"You can be the smartest person with the best information," Stammer said. "But it's useless if you can't relay it."

When warfighters thank him, Stammer always redirects the praise.

"I'm the one who should be thanking you," he says. "You're my heroes."

These conversations remind him why he still serves.

"That's part of what fuels the drive," Stammer said. "What I'm doing matters and they express that to me."

Today, Stammer still serves with clear purpose. Every safe return of an F-35 is thanks to people like him.

"Because at the end of the day, whatever we do, it's for the warfighter," Stammer said. "It all comes down to bringing the aircrew home to their families."

Tim Gantner is a member of Naval Air Warfare Center Weapons Division Public Affairs.

NAWCAD Lakehurst Environmental Test Lab Unveils New Proof Loading Equipment

By Adam Hochron

The Environmental Test Lab at Naval Air Warfare Center Aircraft Division Lakehurst, New Jersey, unveiled two new proof loading machines during a Feb. 25 ribbon cutting ceremony, adding new technology to help customers and support the warfighter.

A proof load machine is a piece of equipment used to impart tension and compression forces on various pieces of equipment. Using very large hydraulic cylinders in conjunction with high-pressure fluid, they produce extreme forces up to 500,000 pounds.

The primary purpose of this testing is to confirm the item has been engineered properly to withstand forces within its expected operational environment. Additionally, testing is for model validation/verification and to discover critical design issues before full deployment, where repair costs are drastically higher or could cause severe mission, equipment and personnel risks. In practical terms, this means new support and Aircraft Launch and Recovery Equipment (ALRE) being deployed to the fleet are properly load tested to ensure they are safe for equipment and personnel.

Lab manager Jonathan Myers noted the horizontal machine is capable of proof loading up to 500,000 pounds. The second is used for

The Environmental Test Lab at Naval Air Warfare Center Aircraft Division Lakehurst, New Jersey, unveiled two new proof loading machines during a Feb. 25 ribbon cutting ceremony, adding new technology to help customers and support the warfighter.

U.S. Navy photo by Adam Hochron

similar tests in a vertical orientation with a maximum tension and compression force of 340,000 pounds. He added the tension force of the horizontal machine is equivalent to the weight of 2,500 sailors, 17 aircraft carrier anchors or eight EA-18G Growlers.

"We have a very unique mission with aircraft launch and recovery equipment and support equipment, and this is the stuff that makes us different and makes it clear how we support our mission," said NAWCAD Lakehurst Executive Director Sean D. Brennan.

The latest addition to the lab's equipment came thanks to Capital Investment Program funding, which Brennan said allows Lakehurst to continue supporting the warfighter in new ways.

"We continue to make those investments because we can do what no one else can, and we're going to continue to do that, making sure that airmen, sailors and soldiers go out and come back safe every day," Brennan said. "That's our mission."

Looking at the large amount of force the machines can produce during testing, Myers said he relates their abilities to an F-18 landing on an aircraft carrier. He noted that during a landing, consider the momentum of a 50,000-pound aircraft flying at 150 knots; it is essential the equipment is tested properly before it is installed in its operational environment. He said these machines can test large pieces of equipment that play a critical role in real-world environments.

Myers said having all the equipment in one space is also beneficial as customers look to save time and money during the testing process.

"It's a one-stop shop for lack of a better term. And a program can come here from start to finish, do all their testing, then they leave, and they're done," Myers said. "There's no logistical or schedule risk of having to go to another lab someplace across the country; send people there."

Other recent additions to the lab include a large vibration table and a Multi-Function Climactic Chamber.

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

SYMPHONY AT SEA:

The Orchestra Supporting Amphibious Flight Operations

By Seaman Apprentice Soren Quinata

The sounds of helicopter rotors, intercom speakers and dragging chains are heard, night and day, across the flight deck of the first-in-class amphibious assault ship USS Wasp (LHD 1), as pilots conduct vital training necessary to maintain proficiency in their craft and ensure their ability to land onboard Wasp anytime, anywhere in the world.

As a mini aircraft carrier, Wasp's flight deck often supports Deck Landing Qualifications (DLQs), a practice for which pilots conduct repeated land and launch evolutions in quick succession to build the muscle memory needed to land aircraft successfully on a moving target at sea. Providing the flight deck in this manner also enables ship's company to train and maintain proficiency in the complex and deadly art of flight operations.

Like any good orchestra, there is an intricate web of personnel, from both inside the skin of the ship and also on the flight deck itself, that must work together to conduct flight operations safely and efficiently. A blend of seasoned sailors move with practiced precision in preparation to play their part in the symphony that is flight operations on a "big deck" amphib. Some of the major roles in support of flight operations include aviation boatswain's mates in handling or fueling, air traffic controllers and aviation support equipment technicians.

The most visible and well-known components of flight operations stand bravely in harm's way, yellow shirts worn proudly, arms signaling in the wind. Landing signalmen enlisted (LSEs) are a highly qualified group of Aviation Boatswain's Mates (Handling) (ABH) responsible for transporting,

U.S. Navy photos by MCSN Savannah Lujan

Sailors assigned to the amphibious assault ship USS Wasp (LHD 1) facilitate deck landing qualifications for an MH-53E Sea Dragon, assigned to the "Blackhawks" of Helicopter Mines Countermeasures Squadron 15 (HM-15).

An MH-53E Sea Dragon, assigned to the "Blackhawks" of Helicopter Mines Countermeasures Squadron 15 (HM-15), takes off from the flight deck of the amphibious assault ship USS Wasp (LHD 1) during flight operations on the ship's flight deck, April 5.

Aviation Boatswain's Mate (Handling) 3rd Class Gerald Manful, left, and Aviation Boatswain's Mate (Handling) Airman Rigio Carpea, both assigned to the amphibious assault ship USS Wasp (LHD 1), signal to a pilot aboard an MH-53E Sea Dragon to land on the ship's flight deck during flight operations.

Aviation Boatswain's Mate (Handling) Airman Miguel Martinez, assigned to the amphibious assault ship USS Wasp (LHD 1), prepares to chock and chain an MH-53E Sea Dragon, assigned to the "Blackhawks" of Helicopter Mines Countermeasures Squadron 15 (HM-15), on the ship's flight deck.

U.S. Navy photos by MCSN Savannah Lujan

landing and securing the aircraft to the deck. Their job is to direct aircraft to their position to launch or land on the flight deck. When an ABH arrives to their first ship, they begin a rigorous qualification process. Initial qualifications start learning to chock and chain, eventually working toward the ability to direct the aircraft movement on deck.

"My heart was racing my first time landing an aircraft," said Aviation Boatswain's Mate 3rd Class Destiny Johnson. "To be directly in front of the downwash, looking up at the helicopter and directing the pilot, was exhilarating and a little scary at first."

Pilots perform phenomena in their aircraft each and every time they set to the skies. However, these "birds" need plenty of fuel to operate. That is where the "combat grapes" come in. The purple-shirted Aviation Boatswain's Mate's (Fueling) (ABF) day starts early in the morning when Sailors of V-4 Division, the ship's fuels division, sample and test the ship's supply of jet fuel to ensure quality control. After the fuel is verified for use, ABFs in their respective pump rooms control where the fuel travels as it makes its way to the flight deck to be quickly accessed by the team on deck. When a pilot lands on Wasp's flight deck, "fuelies" stand by to refuel the aircraft.

Meanwhile, deep inside the skin of the ship, in the amphibious air traffic control center (AATCC), Air Traffic Controllers (ACs) monitor and communicate with the aircraft the flight path the pilots must take to reach the ship safely. To do this, they take into consideration factors such as low visibility, dangerous winds and air space restrictions, in order to provide pilots with the safest, most direct route to the ship.

"We can't afford to make mistakes," said Air Traffic Controller 2nd Class Greylyn Sauro, assigned to Wasp. "People's lives are on the line."

Directing the symphony from on high is Cmdr. Cristobal Yera, Air Boss and senior aviation officer. He is responsible for the safe execution of flight operations onboard Wasp, as well as the training and readiness of 162 Sailors within the Air Department.

Flight operations contribute to Wasp's overall mission as an amphibious platform ready to support operations anywhere in the world.

"It's easy," said Lt.j.g. Eduardo Aceves, the ship's air boatswain. "We have the No. 1 ship and the No. 1 crew in the fleet."

Seaman Apprentice Soren Quinata is a mass communications specialist with USS Wasp (LHD 1).

A team from the Naval Air Warfare Center Aircraft Division monitors data collected during an oxygen system contamination test to check for potential aircrew air impurities using the Navy's new test rig called the Gaseous Injection Analyzer, or GaIA, April 16.

U.S. Navy photos by Todd Frantom

Aircrew Safety Improved with New Oxygen Purity Test at NAWCAD

By Naval Air Warfare Center Aircraft Division

For the first time, the Navy can precisely test how well modern oxygen systems remove impurities to ensure safe air for aircrew after a successful demonstration by teams at the Naval Air Warfare Center Aircraft Division (NAWCAD).

There was previously no way to test whether oxygen systems meet the latest military standards that limit contaminants and prevent exposure-related health issues in flight.

"Pilot safety is combat readiness," said NAWCAD Commander Rear Adm. John Dougherty IV. "Safe systems are the foundation that ensures aviators focus on the mission—not their next breath."

NAWCAD's scientists, chemists and engineers built a test rig, called the Gaseous Injection Analyzer (GaIA), in partnership with Johns Hopkins University. The test rig integrates advanced hardware and analytics to test

air systems including On-Board Oxygen Generation Systems in jets—commonly called OBOGS—for air contaminants.

"Defense aviation's safety standards are high, and many felt this test was impossible," said NAWCAD Senior Chemist Dr. Leah Eller, who led GaIA's development. "We made it possible—it's an important step in maintaining the highest standards of safety and operational readiness."

GaIA has two primary purposes: testing new or improved oxygen systems early during the development phase in collaboration with defense partners, and serving as a fleet resource to support engineering investigations.

In 2017, the Navy prioritized addressing in-flight health effects called physiological episodes after an increase in reports by fleet pilots. Although investigations ruled out contaminant exposure as a contributing factor, the inability to assess exposure risks quickly highlighted a critical gap. NAWCAD's GaIA ensures future oxygen systems prioritize chemical exposure prevention and gives the Navy an ability to address emerging concerns.

For technical consultations on oxygen systems or related components, contact NAWCAD's GaIA test team lead Eller at leah.r.eller.civ@us.navy.mil.

NAWCAD's military, civilian and contract personnel operate test ranges, laboratories and aircraft in support of test, evaluation, research, development and sustainment for all Navy and Marine Corps aviation platforms. Based in Patuxent River, Maryland, NAWCAD also has major sites in St. Inigoes, Maryland; Lakehurst, New Jersey; and Orlando, Florida.

From Naval Air Warfare Center Aircraft Division Visual Information.

FRCE Earns Second Consecutive CNO Shore Safety Award

The Chief of Naval Operations (CNO) has selected Fleet Readiness Center East (FRCE) to receive the CNO Shore Safety Award in the Large Industrial Activity category for the second consecutive year, recognizing its continued efforts toward safety and occupational health excellence in fiscal year 2024.

The annual awards recognize commands with the best overall safety programs that emphasize risk management and mishap prevention. They are considered the top safety awards within the Navy. This is FRCE's fourth time receiving the award.

FRCE Commanding Officer Capt. Randy Berti said the command has dedicated over 20 years to prioritizing occupational safety and health among the workforce, consistently working to improve practices and reduce injuries. He said earning this award is a powerful reminder of what is possible when the facility's workforce comes together in support of the mission.

"The safety of our workforce is our No. 1 priority here at FRC East and it is an honor to be recognized by the Chief of Naval Operations for our efforts," Berti said. "For years, our workforce has upheld a reputation of delivering world-class aviation maintenance, repair and overhaul, engineering and logistics support to the fleet. Now, being recognized as the best in terms of safety multiple years in a row, we are setting the bar for all industrial work environments across the Department of the Navy. I am extremely proud to lead such an exceptional team whose efforts continue to shape the future of Naval Aviation and industrial safety."

Compliance and Quality Department Head Amy Morgan said the success of the depot's safety management system is the result of continuous efforts to integrate safety into all aspects of operations.

"Getting to where we are today did not happen overnight or from one big change. Rather, it came from hundreds of small, intentional changes over the course of many years that blended safety into every decision, task and conversation," Morgan said. "The command has done a great job at reducing risk within the facility, which has helped us maintain record low injury ratings and the associated cost savings, allowing us to focus on our mission: supporting the warfighter."

According to Morgan, FRCE has introduced several safety initiatives over the past two decades, all of which have played a pivotal role in earning this prestigious award.

In 2004, the depot adopted the Occupational Health and Safety Assessment Series 18001, known as the internationally accepted standard for occupational health and safety management systems. FRCE has since transitioned to the International Organization for Standardization 45001 certification, an updated occupational health and safety standardization program.

The command subsequently enrolled in the Occupational Safety and Health Administration's (OSHA) Voluntary Protection Program (VPP), a federal program recognizing employers and workers in private industry and government agencies who have implemented effective safety and health management systems. VPP focuses on preventing fatalities, injuries and illnesses through a system of hazard prevention and control; worksite analysis; training; and management commitment and worker involvement. In 2019, the United States Department of Labor recognized the depot as a VPP Star Site, making FRCE the first Naval Aviation command to reach that level. The depot attained VPP Star recertification in 2023.

Morgan said the depot's participation in the VPP has had a significant impact on its workplace safety efforts.

"VPP is all about going that extra mile to keep our workforce safe," Morgan said. "It provides us with the framework that allows us to go above and beyond the minimum OSHA requirements, further protecting the safety and well-being of FRC East's employees. Because of this, adhering to VPP standards is critical to our success, as the work we do here is important and so is the safety of our workforce."

According to Safety and Occupational Health Division Director Angelo Owens, maintaining an effective safety management system across a highly industrialized Naval Aviation maintenance, repair and overhaul facility with 119 buildings and approximately 4,000 civilian, military and contractor personnel is no small feat. He said OSHA's VPP provided a strong foundation for communicating and implementing safety measures effectively across the complex organization by promoting the division of the depot into manageable sections.

U.S. Navy photo by Samantha Morse

"It's a lot to digest and try to do all at once," Owens said. "Splitting the facility up into smaller areas makes it easier to manage. It also engages supervisors in the safety management system's process and fosters accountability at all levels by instilling a sense of pride and ownership among the safe site leads, supervisors and artisans within each designated area. When we walk around and check each area, they say, 'You're not going to find any violations here,' because they work hard every day to keep it that way."

In addition to its participation in the VPP and the implementation of a comprehensive safety management system, Owens said FRCE provides in-depth, job-specific safety training tailored to its hazards and operational demands.

"The work performed here is highly technical and unique, which means our training must also be unique," Owens said. "In order for us to keep our people safe and drive down injuries, lost workdays and their associated costs, we must ensure our workforce is properly trained. To do this, the command has made the OSHA10-Hour course a requirement for all supervisors and has a handful of safety professionals who are certified OSHA trainers who offer the workforce a realistic, relevant, technically accurate means to minimize risk throughout the facility.

"We've also incorporated instructor-led training courses for a few of our safety programs, including the Confined Space, Respiratory Protection and Fall Protection Programs, in addition to our regular, web-based training," Owens said. "We have found that with some of our higher risk training courses, instructor-led training courses are much more effective because they provide the needed instructor-student interaction and foster a collaborative safety team culture."

The FRCE command also enforces a strict policy requiring all personnel to wear personal protective equipment (PPE) in industrial areas.

"We have multiple fall protection protocols that require harnesses to protect those who are working at heights greater than 4 feet," Owens said. "We have a respiratory protection program to protect individuals from inhaling dangerous materials. A majority of the depot's workforce is required to wear safety footwear to minimize workplace injuries and slips. We also require bump caps, protective gloves and eyewear, and hearing protection, all of which work together to protect our people."

Chris Willis, a V-22 aircraft mechanic at Fleet Readiness Center East (FRCE), performs maintenance on a V-22 Osprey inside the depot's hangar while using the appropriate personal protective equipment. FRCE recently earned the Chief of Naval Operations (CNO) Shore Safety Award in the Large Industrial Activity category for the second consecutive year for its continued efforts toward safety and occupational health excellence in fiscal year 2024.

Morgan said since the implementation of these safety programs, training opportunities and PPE requirements, workplace safety at FRCE has improved.

"Yesterday, while reviewing some old documentation, I was struck by just how far we've come," Morgan said. "In the past, we didn't even have the basic framework—the framing of the house, so to speak—to communicate and manage safety issues quickly and effectively. Now that we do have that framework in place, we are set up to quickly tackle safety risks, further reducing injury rates and driving production well into the depot's future. And the results of the depot's investment in safety are clear.

"We had 835 OSHA-recordable injuries back in 2002, before we began this journey to safety, and in 2024, we only had 29," Morgan said. "In decreasing injuries, we've also greatly decreased the amount of workers' compensation benefits paid out by the command each year. We saw a 55 percent decrease in Federal Employees' Compensation Act costs over the past seven years, which amounts to roughly $1.7 million."

Owens said the depot's investment in improving workplace safety by proactively mitigating risks plays an essential role in providing capable and quality aircraft to the warfighter.

"As a maintenance, repair and overhaul facility, our focus was always on production, getting aircraft in, performing the work and getting them back out to the squadrons," Owens said. "The problem with that is we aren't able to do that as quickly when people are consistently out of work, healing from an injury—which is why we now focus, concurrently, on safety and production. By doing this, we are getting ahead of the problem so we can avoid losing time and manpower due to injuries and get aircraft out more quickly and efficiently."

These successes have also earned FRCE recognition from organizations ranging from the Department of Defense (DoD) to the North Carolina Department of Labor, in addition to the CNO.

In 2024, DoD acknowledged FRCE as the best of the best in terms of safety and occupational health with the Safety and Occupational Health Management System Award for the second time in three years. The same year, the command was presented with its seventh consecutive Gold Award, along with four Million Hour Awards, from the North Carolina Department of Labor Safety Awards, as well as its seventh CNO Aviation Safety Award.

Morgan said maintaining a safe work environment is a team effort and by working together, the depot will continue to see improvements.

"It takes all of us, working together, to remain safe and decrease injuries, and I think we've done a pretty good job at that," Morgan said. "Safety is for the betterment of everyone because it helps ensure we can retire from here while still healthy so we can go enjoy retirement with our families. Thinking of safety first and sustaining that mindset is how we do exactly that."

FRCSW Engineer Reshapes Navy Composite Repairs

After nearly 16 years of service at Fleet Readiness Center Southwest (FRCSW), Dr. Justin Massey, Division Head for Composites and Corrosion, is transitioning to a new role with the Office of Naval Research (ONR) in Japan. His departure concludes a defining chapter for FRCSW's composites team, where Massey has played a critical role in advancing repair techniques that have saved millions in taxpayer dollars and extended the life of naval aircraft.

U.S. Navy photo by Heather Wilburn

Massey's journey at FRCSW began in 2009 when he was hired as an aerospace engineer supporting the F/A-18 program. Over the years, he worked his way up through various roles, including junior materials engineer, senior engineer and technical team lead, before assuming his current position as division head. Despite climbing the leadership ranks, Massey has remained hands-on in the development of innovative composite repair solutions.

"My whole career here has been about taking on the challenges of composite repair and finding ways to fix things that weren't meant to be fixed," Massey said. "That mindset has driven my team's mission—ensuring aircraft are repaired efficiently, eco-

nomically and safely so they can return to the fleet as quickly as possible.

"I've been incredibly fortunate to work with such a talented, dedicated group of people over the years," Massey said. "Any success I've had is because of the team around me. They've inspired me every day with their creativity, resilience and commitment to the mission."

Under Massey's leadership, the FRCSW composites team developed novel repair methods that have had a ripple effect across the Navy. One of the most significant breakthroughs was the Diffuse Reflectance Infrared Fourier Transform (DRIFT) technique, which detects thermal damage in composite materials. Originally adapted from geological research, the technology was refined under Massey's guidance for use on naval aircraft.

In 2017, DRIFT won the Department of Defense's Maintenance Innovation Challenge after proving its effectiveness in assessing heat-damaged components, including a V-22 Osprey wing that was at risk of replacement. The technique has since been adopted across multiple aircraft platforms, including the F/A-18 Hornet and F-35 Lightning II programs.

"This went from an idea we developed in a small lab in San Diego to being implemented across the Navy and Marine Corps," Massey said. "It's something I'm incredibly proud of."

His team also pioneered the use of 3D-printed molds for composite repairs, merging modern manufacturing with traditional repair techniques to extend the service life of aircraft parts.

FRCSW engineer Dr. Justin Massey demonstrates a composite damage assessment using advanced inspection technology. Massey, whose innovations in composite repair have saved the Navy millions, is departing FRCSW for a new role with the Office of Naval Research in Japan.

Massey's tenure at FRCSW was not without obstacles. The COVID-19 pandemic created logistical hurdles for his team, as they navigated social distancing requirements while working on mission-critical repairs. Despite the challenges, his team successfully developed new repair solutions for high-value composite components, including structural elements of the F/A-18 and BQM-177A UAV.

Beyond technical contributions, Massey placed a strong emphasis on workforce development. He spearheaded a training pipeline to ensure the next generation of engineers and technicians has the expertise they need to carry on FRCSW's legacy of excellence in composite repair.

"I always tell my engineers that our job isn't just about fixing parts—it's about finding solutions and making the fleet more agile," he said. "The simplest repair that saves the most time and money is always the best."

As Massey prepares to assume his new role at ONR, he looks forward to applying his expertise on a broader scale. In Japan, he will work with Indo-Pacific allies on advanced research initiatives that support Naval Aviation sustainability.

"This is a rotation, so there's a chance I'll be back one day," Massey added. "If I do return, I hope to bring back valuable lessons and fresh perspectives from my time with ONR that can further enhance our composite repair capabilities."

"This is an opportunity to step out of my comfort zone and work on the bigger picture of research and development," Massey said. "I'll be looking at emerging technologies that could shape the future of Naval Aviation, while also strengthening collaboration with our international partners."

Despite his departure, Massey remains committed to ensuring FRCSW's composite repair capabilities continue to evolve. He hopes his work will serve as a foundation for future innovations that will keep naval aircraft mission ready.

"I may be leaving, but my passion for composite repair isn't going anywhere," he said. "This team has accomplished incredible things, and I know they'll keep pushing the envelope even after I'm gone."

With Massey's next mission ahead, his impact on the command's composites program will endure—both in the techniques he helped develop and in the engineers he mentored along the way.

Written by Janina Lamoglia, Fleet Readiness Center Southwest.

New Electronic Work Order System Improves Efficiency

Fleet Readiness Center East (FRCE) leads the way with an enterprise-wide electronic work order (EWO) initiative set to streamline the aircraft maintenance, repair and overhaul documentation and inspection processes across Commander, Fleet Readiness Centers (COMFRCs).

After seven months of development, FRCE became the first FRC to go live with the system Jan. 14 upon the induction of an UH-1Y Venom at the depot's detachment onboard Marine Corps Air Station New River in Jacksonville, North Carolina.

The system serves as a central digital repository that stores detailed work documentation. It organizes each step of the maintenance, repair and overhaul process, providing easy access to aircraft maintenance inspection plans and instructions all in one place. Every task, operation and process performed at the depot has an associated work order that artisans use as a guide while maintaining aircraft.

Business support specialist Wesley Crocker, who also serves as the electronic work package manager and Enterprise Functional Group quality subject matter expert, said the system will make the depot's operations more efficient.

"The work orders the artisans use when maintaining aircraft are all on paper," Crocker said. "What we have now is a digital version of the work orders within a program that is easily accessible, has a convenient search function, and houses inspection plans and quality call points. It's making operations more sustainable and efficient."

While at FRCE, aircraft undergo many quality inspections to ensure they meet the highest safety and performance standards. Each aircraft platform has designated stages within the maintenance process that require inspections. These inspection stages, known as quality call points, are identified by a physical stamp on the work order. Cylest Ebron, Enterprise Functional Group lead, said the EWO program makes quality inspections more consistent and trackable.

"The printed out paperwork orders would often have all sorts of handwritten marks, stamps and tabs stuck all over it, which can be confusing," Ebron said. "Our engineers and quality personnel have gone through and added every quality call point into the system, 394 to be exact, and they are more detailed than they ever were on the paper version. There's even a notes section that allows us to pass information from one shift to the next, which is so helpful because there isn't a dedicated area for notes on the paperwork orders."

U.S. Navy photos

Chris Smith, left, airframes mechanic, and Todd Baker, right, H-1 production supervisor, access the electronic work order (EWO) system at the Fleet Readiness Center East (FRCE) detachment onboard Marine Corps Air Station Cherry Point in Jacksonville, North Carolina.

Crocker emphasized the EWO system will save a substantial amount of money and increase efficiency.

"To give you an idea of how much paper we were using, the equipment specialists, engineers and quality personnel worked together to convert 114 maintenance procedures from paper to digital for the electronic work order system for the AH-1Z and UH-1Y aircraft," Crocker said. "Each maintenance procedure can contain up to 100 operations, all of which were previously printed out on work orders. It roughly saves about 1,000 pieces of paper per induction. Once we get the system fully implemented for each aircraft platform we service, we will be saving about 75,000 pieces of paper per year."

Eric Macey, AH-1Z and UH-1Y work lead at the depot's New River detachment, said having every work order and instruction organized into a central location within the digital environment has been beneficial.

"I was having to track anywhere between 1,200 to 1,500 paperwork orders at any given time to make sure everything gets done as we move from one phase to another," Macey said. "Tracking

that many work orders is never easy, especially when they are often moved or passed from person to person. The electronic system makes it all very simple for me to just go in there and flag anything that has not been completed yet. We don't have to worry about losing anything, missing steps or getting oil or other substances on the paperwork while performing maintenance."

Macey said the system is saving artisans time by streamlining processes, improving functionality and increasing capabilities.

"Artisans were having to sign off on the paperwork orders three to four times for documentation purposes," said Macey. "Now, they can go in and electrically stamp it one time and it's done. Not only that, but we also no longer waste time searching through different binders, folders and workspaces for work orders or other documents. It's all right there in the system. No more waiting for new documents. No more delays."

Crocker said the program's search function saves a significant amount of time in situations where specific information from past maintenance events needs to be recalled.

"Let's say someone in calibration discovers a torque wrench is out of tolerance; we would go through the work orders and find every single aircraft, component or part that wrench has touched," Crocker said. "Without electronic work orders, this could take months.

"Whereas now, with the electronic work order system, we could just type in that torque wrench number into the database and within seconds, the system would show us everything it has been used on," he said. "It will save time and manpower and allow us to get a message out to the fleet immediately, if needed."

Crocker said even if network connectivity is disrupted, the content stored in the EWO system is still available for usage.

"Another great thing about this program is, if for some reason the system goes down, we can still go in and print a report off that has all the information we need to continue operations," Crocker said. "We're not losing anything. Even if we can't work in the system, we will still have the paper that says what has been done and by whom, and what still needs to be done before we can get an aircraft back to the fleet."

FRCE engineers, compliance and quality personnel and production employees have been working together to convert work orders for each aircraft platform serviced by the depot into the EWO system since early 2024, with plans to be fully implemented by the end of fiscal year 2026, according to Crocker.

"The electronic work order system has been live in the components world at FRC East for about five years now," said Crocker. "Aircraft are a completely different animal, though. It's a much larger task with more moving parts than components. For us to have converted two separate aircraft platforms into the system within a seven-month timeframe is almost unheard of. There have been instances where it's taken seven months to convert a single component."

The EWO initiative is in the process of being established across COMFRC's three largest aircraft maintenance depots: FRCE, FRC Southeast and FRC Southwest. Crocker said though FRCE was the first to go live with the system, the three depots have been collaborating throughout its development.

"Each depot is developing its own maintenance procedures and quality inspection plans that coordinate with the platforms we service, since we don't all service the same aircraft," Crocker said. "We have been working together, meeting weekly to bounce ideas off each other, share insights and come up with solutions. It's been very beneficial because we've been able to help the other depots, and they've been able to help us."

Crocker said the implementation of this system is not only going to benefit FRCE's operations, but also the fleet.

"As a former Marine, I understand the critical importance of having quality, combat-ready aircraft," Crocker said. "This system will help us maintain that standard for the fleet. It not only increases accountability but also makes everything trackable, which is exactly what we need."

Workforce Suggestions Save FRCE More Than $230K

By Heather Wilburn

Ten members of the Fleet Readiness Center East (FRCE) workforce recently earned recognition for their contributions to the Beneficial Suggestion Program (BSP), which allows employees to improve the way the command does business. Employees who develop a money-saving idea that increases the life or quality of a product, reduces costs or improves delivery times have the opportunity to earn a portion of the savings generated by their recommendation.

The nine suggestions honored during a ceremony held April 28 have resulted in a recognized savings of $236,529.43 for FRCE and earned the submitters a total award payout of $11,050.

- Robert Conley—Suggested a bonded stud puller that applies equal pressure during removal, preventing accidental damage to the surrounding aircraft surface, components and tubing.
- Christopher Murphy—Implemented protective covers on the V-22 auxiliary power unit turbine wheel during depot routing, mitigating risk to components, improving quality control and reducing rework.
- Michael Edwards—Developed a C-130 Hercules elevator torque tube bearing housing template system that enhances

U.S. Navy photos

James Tutor, right, of Fleet Readiness Center East's Maintenance, Repair and Overhaul Logistics Department, earned recognition for his beneficial suggestion with an award presented by Department Head Jody Carey.

the efficiency of the process by providing a visual aid to manage the 36 varying screw sizes involved.

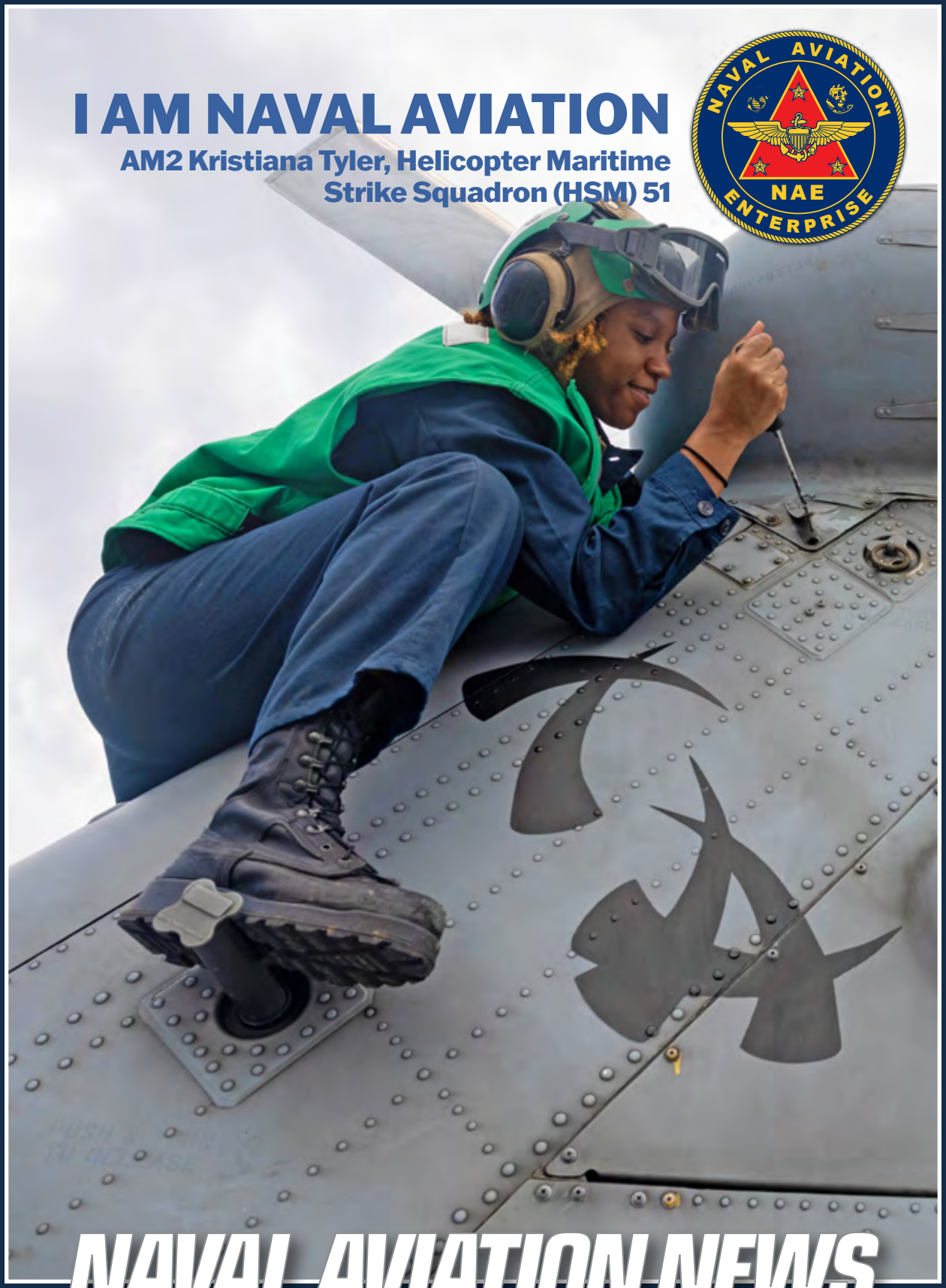
- Jason Hollingsworth and Patrick Baker—Developed a brazing technique and bracket shape modification that mitigates heat-induced warping on the AV-8/TAV-8 main gear box, which extends component lifespans, reduces operational expenses and expedites service delivery timelines.
- Crystal Gent—Created a labeled pattern-type shop aid to improve efficiency of the V-22 Osprey swashplate assembly torque sequence process, reducing human error and leading to a more streamlined workflow.
- Randall Chaney—Suggested an improvement to change the wet rivet installation process to the V-22 center body assembly, which saves time and materials and reduces expenses.
- Horace Jackson—Suggested using nitrogen instead of liquid oxygen to clean and purge the 2,000 gallon oxygen tank, creating reduced opportunity for liquid oxygen spills and fewer vehicles transporting the material.
- William Petroff—Developed an anchor nut tool to aid in the installation of nut plates, which enables the simultaneous alignment of all four nut plates and streamlines the process while enhancing alignment quality.
- James Tutor—Proposed a 3D printing design that adds a flat side to the transportation container for the T64 power turbine drive shaft oil tube, preventing the part from rolling off shelving during transport and storage.

Heather Wilburn is a communications specialist with Fleet Readiness Center East.

Members of the Fleet Readiness Center East (FRCE) Maintenance, Repair and Overhaul Production Department workforce who earned recognition for their contributions to the Beneficial Suggestion Program include, from left to right: Jason Hollingsworth, Patrick Baker, Robert Conley, Randall Chaney, Crystal Gent, Horace Jackson and Christopher Murphy.

I AM NAVAL AVIATION

AM2 Kristiana Tyler, Helicopter Maritime Strike Squadron (HSM) 51



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