11th Marine Regiment activates first long-range missile battery

Photo By Lance Cpl. Migel Reynosa | U.S. Marine Corps Col. Patrick Eldridge, the commanding officer of 11th Marine Regiment, 1st Marine Division, gives a speech during the activation ceremony for Long Range Missile Battery A, 11th Marines, at Marine Corps Base Camp Pendleton, California, July 21, 2023.

Release from the 1st Marine Division

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CAMP PENDLETON, CA, UNITED STATES

07.24.2023

Story by Capt. Joseph DiPietro, 1st Marine Division

In a historic event at Marine Corps Base Camp Pendleton, California, the 11th Marine Regiment, 1st Marine Division activated the Marine Corps' first long-range missile battery during a ceremony July 21.

The new battery, which falls directly under 11th Marines, is designed to enhance the division's and the joint force's long-range strike and eventually sea denial capability and lethality.

"It is truly a privilege and honor to stand with these Marines as we move forward with the long-range fires capability," said Capt. Justin Hillebrand, who became the battery's first commander during the ceremony. "These Marines have done phenomenal things. They took an idea and are making it work. The job just started, but this capability will be able to reach out and provide devastating and lethal fires."

The battery will train with long-range fires launchers, designed to fire Tomahawk cruise missiles, and various supporting assets to further refine the structure and requirements necessary for successful employment of the system. The battery's Marines, along with 11th Marines' leadership, will continue to refine tactics, techniques, and procedures to employ the long-range fires system in support of 1st MARDIV and I Marine Expeditionary Force initiatives.

"This is a historic chapter in the Marine Corps and the 11th Marine Regiment. The American people expect the Marine Corps to prepare for war," added Col. Patrick Eldridge, the commanding officer for 11th Marines. "There are nefarious states and actors in our world today who are credible threats to their neighbors, to our allies, and to the United States. The requirement for this capability now exists and the SecDef turned to the Marine Corps, the Marine Corps turned to 11th Marines, and we turn to Alpha Battery and our test and evaluation partners to make this capability a reality."

The long-range fires platform is an emerging capability for the Marine Corps and is growing as part of the broader ground-based anti-ship missile development for the service.

Col. Eldridge concluded his activation ceremony remarks on a lighter note adding, “I imagine someone pretty high up said, ‘We’ve seen what Marines can do with rifles, let’s see what Marines can do with Tomahawks.’”

In addition to the long-range missile battery activation, Marines with 2nd Battalion, 11th Marine Regiment, 1st MARDIV executed the first live-fire Naval Strike Missile test conducted by Marines of the Navy/Marine Corps Expeditionary Ship Interdiction System last month to demonstrate the firepower of another emerging capability. In conjunction with Marine Corps Systems Command, the NMESIS successfully launched and engaged a simulated target off the coast of Southern California.

“NMESIS is the Marine Corps’ material solution for the ground based anti-ship missile capability through the Remotely Operated Ground Unit for Expeditionary Fires platform,” explained Staff Sgt. Derek Reddy, the NMESIS team leader for 11th Marines, during the flight test. “The guided flight test is absolutely imperative. It is so important that the Marines are actually conducting the exercise now to show off the system and its capabilities to the Marine Corps.”

The long-range fires platform, NMESIS, and other fire support assets are only part of 1st MARDIV’s commitment to sea denial. Maritime reconnaissance, port and airfield seizure, and a continued emphasis on small unit leadership and tactics all drive the division toward capabilities and experience necessary to compete on the modern battlefield. Despite the advances in technology, formations, and tactics, 1st MARDIV Marines and Sailors relentlessly train fire and maneuver

skills and will continue to build on the basics of the combined arms dilemma.

USMC Completes 20,000 Flight Hours with MUX MALE MQ-9A

Release from General Atomics

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SAN DIEGO – 24 July 2023 – General Atomics Aeronautical Systems, Inc. (GA-ASI) congratulates the U.S. Marine Corps (USMC) on achieving a significant milestone of surpassing 20,000 flight hours with their Marine Air-Ground Task Force (MAGTF) Unmanned Expeditionary (MUX) Medium-Altitude, High-Endurance (MALE) MQ-9A Unmanned Aircraft System (UAS).

To date, GA-ASI has delivered eight MQ-9A UAS to the USMC. Two of these MQ-9A aircraft are actively engaged in operational missions, playing a vital role in supporting mission-critical

Marine Corps objectives. The USMC awaits delivery of 12 additional aircraft, which will fulfill their goal of three squadrons by 2025.

“This strategic acquisition of MQ-9As underscores the USMC’s commitment to strengthening their aerial surveillance capabilities and demonstrates their confidence in GA-ASI’s expertise in delivering top-tier UAS,” said GA-ASI President David R. Alexander.

Renowned for its fault-tolerant flight control system and triple-redundant avionics system architecture, the MQ-9A UAS embodies the industry’s highest standards of reliability and performance, surpassing those of many manned aircraft.

The USMC fleet will ultimately be entirely composed of the MQ-9A Extended Range (ER) configuration, enhanced with wing-borne fuel pods and reinforced landing gear. This model has been specifically designed to extend its endurance to more than 30 hours, enabling persistent long-endurance surveillance capabilities. Equipped with Full-Motion Video and both a Synthetic Aperture Radar and a Moving Target Indicator/Maritime Mode Radar, this advanced system provides the USMC with a comprehensive real-time situational awareness picture.

The USMC’s 20,000 flight hours with MQ-9A represent an impressive accomplishment in the field of unmanned aviation. GA-ASI is honored to have played a role in this achievement and looks forward to continuing its collaboration with the USMC to further advance the capabilities of unmanned systems and support their growing UAS squadrons.

Marine Corps Releases Command Investigation Into the MV-22B Osprey Mishap in California on June 8, 2022

PACIFIC OCEAN (Dec. 6, 2022) – An MV-22 Osprey tiltrotor aircraft assigned to Marine Medium Tiltrotor Squadron (VMM) 364 takes off from the flight deck of amphibious assault carrier USS Tripoli (LHA 7).
Statement from the V-22 Joint Program Office (PMA-275)

On June 8, 2022, five U.S. Marines from the “Purple Foxes” of Marine Medium Tiltrotor Squadron 364 (VMM-364) lost their lives during an aviation mishap onboard an MV-22 Osprey. The investigation into the mishap’s cause is complete, and Marine Corps leaders have shared the results with the families.

The investigation revealed no error on the part of the pilots

and aircrew, and confirmed no maintenance errors led to the mishap. It was determined the pilots and aircrew were conducting routine flight operations in accordance with applicable regulations when a catastrophic, unpreventable and unanticipated mechanical failure occurred.

The investigation revealed the cause of the mishap was a dual hard clutch engagement (HCE) which created a Single Engine and Interconnect Drive System (Single Engine/ICDS) failure; the failure resulted in a catastrophic loss of thrust on the right-hand (RH) proprotor. The degraded drivetrain caused by the dual HCE event and subsequent Single Engine/ICDS failure created an unrecoverable departure from controlled flight, resulting in the tragic crash that occurred on June 8, 2022.

The V-22 Joint Program Office (PMA-275) continues to take decisive actions to address the HCE mechanical challenge. Since 2010, there have been numerous actions associated with defining, mitigating or eliminating HCEs. The results of this investigation have further driven efforts to mitigate the HCE phenomenon, identify root cause and prevent it from occurring.

“Our latest research and mitigation efforts produced several new findings that significantly increased our understanding of the HCE phenomenon,” said Col. Brian Taylor, PMA-275 program manager. “While definitive root cause for all HCE events has not yet been identified, we are using this new information to implement solutions designed to reduce the likelihood of an HCE event and increase aircrew safety.”

Through a combination of efforts, including the recent input quill assembly replacement bulletin in February 2023, the risk of a HCE event occurring was reduced by greater than 99 percent. The V-22 community executed 22,258 flight hours between February 3, 2023 and July 19, 2023, with zero HCE events.

“The completion of this investigation does not close the HCE effort within PMA-275,” Taylor added. “The implemented IQA life limit, which reduced overall V-22 HCE risk by greater than 99 percent, was not a result of this investigation but is certainly reinforced by its findings.”

“The loss of these five Marines is tragic and, while there will always be inherent risk in military aviation, we are working tirelessly to identify and mitigate risk across the V-22 platform; we are committed to the safety of the Marines, Airmen, Sailors, and the Japan Ground Self Defense Force, that fly this platform every day,” he said.

HQMC Statement:

The investigation into the cause of the Marine Medium Tiltrotor Squadron 364, 3rd Marine Aircraft Wing MV-22B Osprey mishap in Glamis, California, on June 8, 2022, is complete. We have provided the results of the investigation to the families of our fallen Marines and provided all available resources to them during this difficult time.

The loss of Capt. Nicholas P. Losapio, Capt. John J. Sax, Cpl. Nathan E. Carlson, Cpl. Seth D. Rasmuson, and Lance Cpl. Evan A. Strickland continues to be felt across the Marine Corps.

The investigation revealed the cause of the mishap was a dual hard clutch engagement (HCE) which created a Single Engine and Interconnect Drive System (Single Engine/ICDS) failure; the failure resulted in a catastrophic loss of thrust on the right-hand (RH) proprotor. The degraded drivetrain caused by the dual HCE event and subsequent Single Engine/ICDS failure created an unrecoverable departure from controlled flight, resulting in the tragic crash that occurred on June 8, 2022.

It is clear from the investigation that there was no error on the part of the pilots and aircrew and nothing they could have done to anticipate or prevent this mishap. They were conducting routine flight operations in accordance with

applicable regulations when this catastrophic and unanticipated mechanical failure occurred. The investigation also found there was no maintenance error on the part of the team whose job it was to prepare the aircraft to fly on the day of the flight.

The Marine Corps has taken the following actions in coordination with the original equipment manufacturer: design and field a new Proprotor Gearbox Input Quill Assembly that mitigates unintentional clutch disengagements and hard clutch engagement events; improve MV-22B drivetrain and flight control system software, drivetrain component material strength, and inspection requirements; and integrate a crash survivable, high-temperature, fire-resistant flight data recorder into all MV-22B aircraft. All USMC MV-22B commands will also present this investigation to pilots and aircrew to discuss the hazards of hard clutch engagements and its potential to cause a Single Engine/Interconnect Drive System failure compound emergency.

On February 3, 2023, the Marine Corps, Navy, and Air Force Special Operations Command issued Dynamic Component Bulletin 63 which directed the replacement of all input quill assemblies over a predetermined flight hour threshold at the recommendation of the V-22 Joint Program Office. Replacing the input quill assembly at this threshold significantly reduces the likelihood of a Hard Clutch Engagement occurring by 99 percent, based on the data.

We will never forget Capt. Nicholas P. Losapio, Capt. John J. Sax, Cpl. Nathan E. Carlson, Cpl. Seth D. Rasmuson, and Lance Cpl. Evan A. Strickland, and their loved ones, as we continue with our quest to provide the safest, most lethal platforms to the men and women who fly them.

The redacted command investigation is available to the public via the Marine Corps Freedom of Information Act website: hqmc.marines.mil/Agencies/USMC-FOIA/FRR/.

Bell Expands H-1 Advanced Maintenance Training Academy for USMC

Release from Bell Textron

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Jul 19, 2023

Bell Expands H-1 Advanced Maintenance Training Academy for USMC

What does Marine Corps Air Station (MCAS) Camp Pendleton, MCAS Futenma, Bell's Amarillo Assembly Center, and Bell's Repair and Overhaul Center have in common? They are all locations where U.S. Marine Corps aircraft maintainers come to receive top-of-the-line maintenance training for the Bell H-1 aircraft line.

Bell has launched its H-1 Advanced Maintenance Training Academy (AMTA) to provide long-term fleet support through a week-long, interactive training program taught by Bell H-1 maintenance instructors and specialists. The training is an immersive experience coupled with 3-D courseware and hands-on technical instruction for routine maintenance repairs on items such as flight controls, gearboxes, swashplates, and both rotor blades.

"Through the H-1 AMTA, Marine maintainers can take the training knowledge that they receive here and implement it directly on the H-1 flight line, ensuring mission-focused fleet readiness at all times," said Steve Rudat, H-1 AMTA instructor, Bell.

Marine maintainers from various Marine Aviation Logistics Squadrons (MALS) and Marine Light Attack Helicopter Squadrons (HMLA) located around the world, including MALS-29, MALS-39, HMLA-167, HMLA-169, HMLA-267, HMLA-367, HMLA-369, and HMLAT-303, have attended the H-1 AMTA offered at one of the participating locations.

Most recently, MCAS Camp Pendleton was added to the list of locations that host the H-1 AMTA.

"The goal of the AMTA is for Marines to develop a deeper understanding of the H-1 platform and how the different aircraft systems function together. Whether they are at their home squadron or deployed on a mission, our AMTA program

provides H-1 Marine maintainers with the skills to keep their aircraft on the flight schedule," said Bryan Riley, H-1 fleet support manager, Bell.

Since its launch, over 100 Marine maintainers have successfully completed the training program.

"At Bell, we are committed to providing top-tier after-market support to our customers, and this is one of the key ways that we can support the mission of the HMLA community," said Nate Green, H-1 program manager, Bell.

The Bell H-1 line is purpose-built to support the U.S. Armed Forces. Bell continues to modernize the Bell AH-1Z Viper and Bell UH-1Y Venom to serve the future generations of warfighters. The current line of the Viper and Venom have proven to be two of the most agile, dependable, and interoperable aircrafts on the market.

General Officer Announcement

Release from the U.S. Department of Defense

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General Officer Announcement

July 17, 2023

Secretary of Defense Lloyd J. Austin III announced today that the president has made the following nominations:

Marine Corps Maj. Gen. James H. Adams, III, for appointment to the grade of lieutenant general with assignment as deputy commandant for Programs and Resources, Headquarters, United

States Marine Corps, Washington, D.C. Adams is currently serving as deputy director, Requirements and Capability Development, J-8, Joint Staff, Washington, D.C.

LCACs 105-107 Receive Lift of Opportunity Aboard USS Gunston Hall

Release from Naval Sea Systems Command

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By Team Ships Public Affairs

Washington Navy Yard – Ship to Shore Connector (SSC), Landing Craft, Air Cushions (LCAC) 105-107 received a lift of opportunity (LOO) aboard USS Gunston Hall (LSD 44), on July 14.

LCACs 105-107 have been at Naval Surface Warfare Center Panama City Division for post-delivery test and trials following their delivery to the Navy by Textron Systems.

The leadership on the USS Gunston Hall worked with Program Executive Office (PEO) Ships, Naval Surface Warfare Center Panama City Division, and Assault Craft Unit FOUR (ACU 4) as LCACs 105-107 entered the well deck for transport.

"SSC LCACs are in serial production and actively providing much-needed agility and speed to our fleet," said Capt. Jason Grabelle, program manager, Amphibious Assault and Connectors Programs, PEO Ships. "The flexibility of LCACs, combined with their technology, provide our Navy and Marine Corps team with capability for today and the future fight."

Later this month, the Gunston Hall team will offload these three crafts to their new home at ACU 4 in Little Creek, Virginia. ACU 4 is the parent unit for LCACs on the east coast. LCACs 101-104 arrived at ACU 4 in February 2022.

SSC LCACs are built with configurations, dimensions, and clearances similar to the legacy LCACs they replace – ensuring that this latest air cushion vehicle is fully compatible with existing, well deck-equipped amphibious ships, the Expeditionary Sea Base, and the Expeditionary Transfer Dock. LCACs are capable of carrying a 74-ton payload. They primarily transport weapon systems, equipment, cargo, and assault element personnel through a wide range of conditions, including over-the-beach.

As one of the Defense Department's largest acquisition

organizations, PEO Ships is responsible for executing the development and procurement of all destroyers, amphibious ships, special mission and support ships, boats, and craft.

GA-ASI'S UNMANNED AIRCRAFT CROSS 8 MILLION FLIGHT HOURS

Release from General Atomics Aeronautical Systems, Inc.

New MQ-9B SkyGuardian®/SeaGuardian® Models Add More Than 4,000 Hours

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SAN DIEGO – 14 July 2023 – General Atomics Aeronautical Systems, Inc. (GAASI) today announced that its family of Unmanned Aircraft Systems (UAS), which includes the Predator®, Reaper, Gray Eagle, Avenger®, and MQ-9B

SkyGuardian®/SeaGuardian® lines, has surpassed eight million flight hours. GA-ASI aircraft have completed 566,000 total missions in nearly 40 countries around the world.

Adding to the total are 13 MQ-9B SkyGuardian/SeaGuardian UAS that have flown more than 4,000 flight hours, including the new Protector RG Mk1 being delivered to the United Kingdom's Royal Air Force. The first three Protectors are currently undergoing Integrated Test, Evaluation, and Acceptance trials. In addition, MQ-9Bs are being operated by the Japan Coast Guard (JCG) and Japan Maritime Self-Defence Force (JMSDF), as well as supporting various U.S. Navy exercises.

"GA-ASI continues to be a leader in developing reliable, cost-efficient, and sustainable unmanned aircraft systems that perform advanced operations for our customers around the world," said GA-ASI CEO Linden P. Blue. "Eight million flight hours is another achievement on our list of historic firsts, which demonstrates our relentless commitment to quality."

The exact aircraft and customer that achieved the milestone is unknown, as it's estimated that more than 50 Predator-class Medium-Altitude, Long-Endurance (MALE) RPA are airborne worldwide every moment of every day.

GA-ASI aircraft average 40,000 hours per month, supporting programs with the U.S. Air Force, U.S. Army, U.S. Marine Corps, NASA, the Italian Air Force, the UK Royal Air Force, the French Air Force, the United Arab Emirates Armed Forces, the Spanish Air Force, the Royal Netherlands Air Force, the Indian Navy, the Polish Air Force, JCG, JMSDF, and others, with more customers coming online soon. Missions include helping protect ground units on the battlefield, supporting first responders in the wake of natural disasters, and providing critical ISR around the world. These aircraft systems continue to maintain some of the highest mission-capable rates in the U.S. Air Force and U.S. Army aircraft inventories.

GA-ASI has produced more than 1,000 aircraft and nearly 500 Ground Control Stations (GCS) in more than three decades of business. In addition to UAS and GCS, GA-ASI produces Processing, Exploitation, and Dissemination (PED) systems, as well as sensor payloads that deliver radar and video imagery, detect moving targets on the ground and over water, and provide Signals Intelligence (SIGINT) on signals of interest. GA-ASI has also developed a Detect and Avoid (DAA) system to facilitate the safe integration of unmanned aircraft systems into civil airspace in addition to combat environments.

The Predator-series family includes Predator A and Predator XP, Predator B/MQ-9A Reaper, Predator B Extended Range (ER), Guardian, Gray Eagle, Gray Eagle ER, Predator C Avenger/ER, and MQ-9B SkyGuardian/SeaGuardian.

NAVAIR Selects Mercury to Deliver Digital Head-Up Display for T-45 Goshawk Training Aircraft

Release from Mercury Systems Inc.

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ANDOVER, Mass., July 12, 2023 (GLOBE NEWSWIRE) — Mercury Systems, Inc. (NASDAQ: MRCY, www.mrcy.com), a technology company that delivers processing power for the most demanding aerospace and defense missions, received a five-year contract worth as much as $83 million from the U.S. Naval Air Systems Command to deliver high-definition, digital Head-Up Display (HUD) systems for the T-45 Goshawk training aircraft. This firm-fixed-price delivery order was issued under a previously awarded basic ordering agreement. The Navy is the first customer to adopt Mercury's HUD1080 technology that enables aviators to see critical flight and weapons data in real-time without taking their eyes off the sky.

Under this program, Mercury expects to deliver nearly 300 HUD systems, with the first $45 million production order awarded in conjunction with this contract. The T-45 Goshawk is a tandem-seat jet trainer used to train Navy and Marine Corps aviators to fly the U.S. military's most advanced fighter jets, including the F/A-18E/F Super Hornet, F-35 Lightning, and the EA-18G Growler, as well as tactical airborne early

warning aircraft such as the E-2 Hawkeye. The new T-45 HUD with an integrated camera is based on Mercury's low-profile HUD design that minimizes pilot discomfort, enhances situational awareness, and maximizes an aviator's field-of-view. It is also DAL-A certifiable—the highest level of design assurance that can be applied to airborne systems—allowing it to be used for critical flight and mission tasks such as landing on aircraft carriers.

Why It Matters

Pilots must understand a wealth of rapidly changing data while flying, and a HUD allows them to maintain awareness of this information without having to take their eyes off the sky to look down at multiple instruments. Current training aircraft use older analog HUD systems that have a bulky design, are out of production, and cannot integrate with the modern enhanced vision systems used in today's fighter jets. The integration of Mercury's HUD into the T-45 solves the obsolescence problem for the aircraft and ensures pilots are trained in an operationally realistic environment, as the systems are compatible with upcoming T-45 avionics upgrades.

"The introduction of the HUD1080 expands Mercury's display technology portfolio and our ability to deliver mission-ready technology and solutions for all aspects of the avionics ecosystem," said Mitch Stevison, Executive Vice President and President of Mercury's Mission Systems division. "We look forward to delivering our digital HUD for the T-45 Goshawk, ensuring today's student pilots have the technology to train for current and future missions."

Bataan ARG and 26th MEU(SOC) Marines, Sailors Set Sail for Deployment

Release from Commander, U.S. 2nd Fleet

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NORFOLK, VA, UNITED STATES

07.10.2023

Courtesy Story

Commander, U.S. 2nd Fleet

ATLANTIC OCEAN – U.S. Marines and Sailors of the Bataan Amphibious Ready Group (BAT ARG) / 26th Marine Expeditionary Unit (MEU) (Special Operations Capable) (SOC) departed Norfolk, Virginia, and Camp Lejeune, North Carolina, July 10,

after completing a comprehensive, nine-month training program.

The deployment is part of a regular rotation of forces that foster maritime security and increased theater cooperation by providing a forward naval expeditionary presence with vast, specialized crisis response capabilities to support the geographic combatant commander, numbered fleet commander, and joint special operations task force commander.

“We are ready to complete any mission before us, and we are looking forward to the opportunities we will have to work alongside our allies and partners in the months ahead,” said Capt. Martin Robertson, commander of Amphibious Squadron 8. “Our Sailors and Marines have trained hard and are ready. We are thankful for the support of our families and loved ones during this journey.”

The BAT ARG/26th MEU(SOC)’s pre-deployment training program culminated with its final certification exercise, Composite Training Unit Exercise (COMPTUEX), a series of exercises designed to fully integrate roughly 4,000 Marines and Sailors into one cohesive contingency force while testing the units’ abilities to carry out sustained operations from the sea. During COMPTUEX, the BAT ARG/26th MEU(SOC) operated under NATO command and control to replicate the realities of missions the Navy-Marine Corps team may encounter on deployment.

“Over the course of the last nine months, Marines and Sailors of the 26th MEU(SOC) successfully demonstrated the battle staff competencies coupled with all-domain operational capabilities and high proficiency across the MEU Marine Air-Ground Task Force (MAGTF) mission essential tasks and warfighting functions, to include MEU/SOF-integration, during

an enhanced, rigorous pre-deployment training program within a scenario reflective of the EUCOM, AFRICOM, and CENTCOM regions," said Col. Dennis "Dolf" Sampson, commanding officer of the 26th MEU(SOC). "Throughout our work-ups, the Bataan Amphibious Ready Group and the 26th MEU(SOC) executed multiple advanced at-sea training exercises and fully integrated into a cohesive naval expeditionary force capable of supporting theater campaigning requirements while remaining postured, as the Nation's Immediate Response Force, to rapidly respond to any crisis."

The Bataan ARG is comprised of the Wasp-class amphibious assault ship USS Bataan (LHD 50), the San Antonio-class amphibious transport dock USS Mesa Verde (LPD 19) and the Harpers Ferry-class dock landing ship USS Carter Hall (LSD 50). Embarked commands include commander, Amphibious Squadron (CPR) 8, Fleet Surgical Team 8, Tactical Air Control Squadron 21, Helicopter Sea Combat Squadron 26, Assault Craft Unit 4, Beach Master Unit 2, and the 26th MEU(SOC).

"I could not be any prouder of the Marines, Sailors, and families of the 26th MEU(SOC)," Sampson said. "They set the bar very high during our work-ups as the premiere Tri-GCC Crisis Response Force, showcasing the flexibility and all-domain operational capabilities the ARG/MEU(SOC) provides to a Fleet or Joint Task Force Commander within the littorals and beyond."

The 26th MEU(SOC) serves as one of the Nation's premier crisis response forces capable of conducting amphibious operations, crisis response, and limited contingency operations, to include enabling the introduction of follow-on forces and designated special operations, in support of theater requirements of the Geographic Combatant Commander. Coupled with the BAT ARG, the 26th MEU(SOC) serves as a premier stand-

in force with a full complement of all-domain capabilities to operate persistently within the littorals or weapons engagement zones of an adversary.

For more information, please contact Bataan ARG and 26th MEU(SOC) Public Affairs: Bataan Amphibious Ready Group Public Affairs, CPR8PAO@lhd5.navy.mil and 26th Marine Expeditionary Unit (Special Operations Capable) Communication Strategy & Operations, 26MEU_COMMSTRAT@bataan.usmc.mil.

Third Marine Aircraft Wing Squadron Prints Medical Device In-flight

[Release from the 3rd Marine Aircraft Wing]

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07.07.2023

Story by 2nd Lt. Andrew Baez, 3rd Marine Aircraft Wing

MARINE CORPS BASE CAMP PENDLETON, Calif. – On June 21, 2023, Marine Medium Tiltrotor Squadron (VMM) 164, Marine Aircraft Group (MAG) 39, 3rd Marine Aircraft Wing (MAW), facilitated the in-flight three-dimensional (3D) printing of a medical cast aboard an MV-22B Osprey, in support of the Marine Corps' Integrated Training Exercise (ITX) 4-23. This milestone event took place as the U.S. Marine Corps looks to sharpen its expeditionary manufacturing capabilities. The Assistant Commandant of the Marine Corps, Gen. Eric M. Smith, emphasized the importance of these organic Marine Corps capabilities in recent testimony to the Senate Armed Services Committee.

“We have to do some very creative work to do additive manufacturing and 3D printing forward,” Smith said. “If confirmed, I’m committed to continuing that effort because I do see one day we will be printing forward in forward operating bases. We’ll be printing major end items, aircraft engines, propellers, we’ll be doing that forward as opposed to straining the lines that come from the United States through contested logistics areas.”

The successful cast print, in collaboration with the Marine Innovation Unit (MIU) and the Naval Postgraduate School (NPS), showcased one angle of Marine Corps aviation’s capacity to facilitate 3D printing in-flight, mirroring potential realistic, dynamic combat scenarios.

The event began with the concept of a Marine in the field with a broken wrist. The steps included scanning the Marine’s arm, optimizing the cast shape using generative design software, and printing the device while en route to a medical evacuation mission.

Lt. Col. Michael Radigan, an MIU liaison to the Naval Postgraduate School, operated the printer in-flight. He currently works with the Consortium for Additive Manufacturing Research and Education (CAMRE), which supported ITX with advanced manufacturing capabilities. The specific printer used is known as a TAMOS (Tactical Advanced Manufacturing Operational System), developed by Mr. Spencer Koroly from Naval Information Warfare Center-Pacific (NIWC-Pacific), San Diego, California.

“This event was significant because it demonstrated a mobility for 3D printing that we have not seen before,” Lt. Col. Radigan said. “Sometimes there is a perception that 3D printers can only operate in a clean room to get mission capable parts. I think we smashed that theory and showed that

not only can they operate on the go, but we can do it well during highly dynamic combat flight profiles."

CAMRE recognizes that advanced manufacturing will play a significant role in a contested logistics environment. 3D printing complements the supply system and makes it more resilient during combat. Recently, Marines from I Marine Expeditionary Force learned how to build, operate and maintain the machines at NIWC-Pacific to prepare for their deployment in which they will be taking the AMOS printer with them. The printer also prints replacement parts for the machine in the event it needs maintenance, and this allows more independence for the expeditionary unit.

Col. Jeremie Hester, Commanding Officer of MAG-39, views the event a means to better support Marines operating on the ground.

"We are doing what Marine Aviation has always done – support our brothers and sisters on the ground," Hester said. "Now we are figuring out how to do it better!"

Recognizing the importance of innovation and emerging technologies, VMM-164 was poised to play a critical part in this evolution by providing assault support during ITX 4-23. Third MAW has the capability to host multiple printers aboard aircraft and produce a substantial volume of needed parts en route to an objective. Due to the printers' low power requirements, follow-on experimentation will explore powering dozens of printers via aircraft power for production at scale in contested environments.

"Third MAW has always kept an eye forward," Radigan said. "Demonstrations like this reinforce their commitment to staying on the leading edge."