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THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

STATEMENT OF

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BEFORE THE

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

SMALL UAS AND COUNTER-SMALL UAS: GAPS, REQUIREMENTS, AND PROJECTED CAPABILITIES

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Chairman Wittman, Ranking Member Norcross, and distinguished members of the Subcommittee, I am thankful for the opportunity to report on the state of Marine Corps' effort to address the increased threat posed by small unmanned aerial systems (sUAS) to our forces, both home and abroad, and our efforts to provide our own forces with risk-worthy sUAS, providing an asymmetric capability where it is needed most. Technology is quickly evolving at a pace never seen before and there has been a radical change in the character of war. While we continue to modernize and prepare for a high-end fight against a peer adversary, we are learning lessons from the battlefields in Ukraine and Israel. We have seen the effects of the very low bar for entry into modern warfare that sUAS present.

We have an imperative to learn from what we can observe and to protect our Marines from this very threat. The Marine Corps has already begun fielding numerous programs of record to combat these threats, but we also are seizing on the opportunity to iterate on new and emerging technologies that have recently become available. Even with our current programs of record, we still have gaps that need to be addressed and remain focused on delivering a portfolio approach to protecting our forces while enabling them with the capabilities sUAS offer. There is much work to be done, and we are moving in the right direction and must accelerate if we are going to maintain pace with our adversaries.

The critical role of Marines as our nation's crisis response force demands that we equip our Warfighters with relevant and necessary capabilities swiftly. To meet these demands, we prioritize speed and integration within the Joint Force. The work of this Subcommittee is therefore not just important, but crucial to the continued success of the Marine Corps and our ability to face future challenges. I am eager to collaborate with this Subcommittee to ensure your Marine Corps remains the world's preeminent fighting force.

Commandant of the Marine Corps' Priorities

The Marine Corps continues to balance our mandate as the Force-in-Readiness with our modernization efforts to meet the demands of an evolving battlefield. This balance is maintained through clear guidance, engaged and accountable leadership at every echelon, a ruthless focus on readiness, and predictable and adequate funding. The Commandant provided clear guidance upon assuming office, which remains unchanged. 1) Balance Crisis Response with Modernization Efforts; 2) Naval Integration and Organic Mobility; 3) Quality of Life; 4) Recruit, Make and Retain Marines; and 5) Maximize the Potential of our Reserves. These priorities inform all Marine Corps planning, including our budget. The Commandant has made Modernization a top priority. The use of sUAS on the battlefield has tremendous implications on our forces, from protecting our forces and installations to exploiting that very same capability. The Commandant expects us to equip our Marines with cutting-edge technology, demonstrated daily as effective against the world's most advanced forces, while simultaneously safeguarding them from its risks.

Marine Corps Modernization

Our ongoing modernization efforts are in response to the evolving character of warfare, particularly in the Indo-Pacific region. The Marine Corps has numerous efforts underway to ensure our Marines can fight and win, not only in the Pacific, but on any future battlefield. The Marine Corps modernizes through a campaign of learning that generates a body of evidence to inform senior leader decision making. Wargaming, live force experimentation, science and technology development, modeling and simulation, operations analysis, exercises and operations

contribute to the campaign of learning. These activities span the force development enterprise, Headquarters Marine Corps, and the Fleet Marine Force.

Integration of small unmanned aerial systems (sUAS) and counter UAS (CUAS) capabilities are necessary and enhance our ability to operate in contested environments.

We will look to maximize what sUAS bring to the battlefield and leverage their quickly adaptable technology to assist us in the areas below:

- **Intelligence, Surveillance, and reconnaissance (ISR).** These sUAS can offer nearly continuous ISR, which is crucial for maintaining situational awareness and reconnaissance dominance in a battlefield where there are no safe havens.
- **Lethality.** The ability to carry out precision strikes enhances the lethality of the Marine Corps, allowing the Fleet Marine Forces to engage targets effectively and with minimal collateral damage.
- **Real-time Data Integration.** sUAS feed real-time data into combined kill webs, which is essential for integrating joint and naval fires, thereby improving the effectiveness of combined arms operations.

Conversely, the adversary's use of sUAS provides them with the very same capabilities and opportunities. Our CUAS efforts are just as vital, safeguarding Marine forces from adversary sUAS that could interfere with operations while preventing adversaries from collecting intelligence on our activities. Marine CUAS feature an ever-expanding array of detection systems to counter the evolving technologies used by combatants on modern battlefields, while incorporating both kinetic and non-kinetic defeat mechanisms, including advanced electromagnetic warfare capabilities. These platforms are integrated at the tactical edge,

providing a defensive layer for the Marines operating within an adversary's weapons engagement zone (WEZ).

In summary, the Marine Corps stands ready and lethal, campaigning as a naval expeditionary force-in-readiness. The Marine Corps continues to make significant progress modernizing, and the results of our endeavors are evident today in increased sensing, mobility, and fires capabilities. All the while, the Marine Corps continues to leverage other activities within the Department of Defense to rapidly field new and less expensive capabilities and add them to our portfolios. By integrating advanced sUAS and CUAS systems, the Marine Corps enhances its ISR capabilities, strike options, and resilience against enemy actions. This modernization ensures that Marines can continue to operate effectively in the Indo-Pacific, a region of strategic importance, and against peer adversaries who are also advancing their military capabilities.

Small UAS

The Marine Corps is bolstering its small UAS capabilities, fielding lightweight systems for squad- and company-level ISR over short to medium ranges, and more robust systems for extended battalion-level support to enhance lethality and situational awareness at the tactical edge. Operated by highly trained personnel, these systems deliver critical intelligence and strike options, adapting to modern battlefield demands. Just this past month, Marines provided sUAS and other expeditionary-based capabilities to safeguard critical infrastructure in the Baltic Sea.

- **Group 1 UAS (<20 lbs):** Group 1 capabilities contain both short and medium range systems. The SkyDio X2D and SkyRaider R80D are short range vertical takeoff and landing (VTOL) systems providing ISR capabilities down to the squad level. They have an operating range of 5-8km and an endurance of 35-45 minutes. A total of 771 out of 1911 systems have been

fielded across the Marine Expeditionary Forces (MEFs), Marine Forces Reserve (MARFORRES), and Marine Forces Special Operations Command (MARSOC). The PUMA RQ-20 is a medium range fixed-wing aircraft that provides ISR to company-level incidental operators. It has an operating range of 5-20km and an endurance of 90-180 minutes. The Marine Corps has fielded 212 out of 600 systems across the Ground Combat Element (GCE).

- **Group 2 UAS (20-55 lbs):** The Stalker VXE-30 is a fixed-wing, VTOL-capable UAS that provides ISR to the battalion level by Primary Military Occupational Specialty (PMOS) operators (7316). It has an operating range of 5-160km and an endurance of 4-8 hours using long-range communication within line of sight. The Marine Corps has fielded 39 out of 120 systems across the GCE and MARSOC.
- **First Person View (FPV) Drone S&T Development**: The Marine Corps is integrating first person view (FPV) controlled drone systems to enhance lethality and operational effectiveness. These FPV systems, as a compliment to loitering munitions, offer a low cost and attritable system that brings enhanced sensing and lethality to the lowest echelons within the formation. As we continue to iterate and build experience within the organization, we are identifying surmountable technical hurdles that will greatly increase capability and reduce time to train. Employing these systems in their present configuration will establish foundational tactics, techniques, and procedures (TTPs) tailored to this specific form factor, while pinpointing areas where technology or research and development can enhance our effectiveness.

Last, one-way attack (OWA) drones may not necessarily fit into the sUAS category, but their integration into our formations will be essential. Programs like the Low-cost Uncrewed

Combat Attack System (LUCAS) are providing the Marine Corps with lower cost long range fires options and leveraging the lessons learned in Ukraine and Israel.

Counter-UAS

The Marine Corps is deploying several large-scale programs designed to counter a wide range of threats, from enemy aircraft and ballistic missiles to the growing challenge of sUAS. These systems require trained operators who complete months-long courses and earn a PMOS, necessary to provide critical defense for high-value assets within our formations. Most of our program of record solutions fall into this category.

- **Marine Air Defense Integrated System (MADIS).** MADIS is an air defense system that offers an upgradeable and expeditionary capability. It uses organic sensors to detect and engage aerial threats, safeguarding maneuver forces, expeditionary bases, and critical assets. The system is mounted on Joint Light Tactical Vehicles and can neutralize both manned aircraft and unmanned aerial systems using Stinger missiles, 30mm cannons, and electromagnetic warfare systems. The first 13 systems were delivered in December 2024, with further deliveries planned throughout fiscal year 2025. The acquisition goal is 190 systems to equip 12 firing batteries. Future enhancements include kamikaze UAS and Advanced Precision Kill Weapon System (APKWS) rockets to counter sophisticated threats at greater distances.
- **Light-Marine Air Defense Integrated System (L-MADIS):** L-MADIS is a smaller version of MADIS, designed for air and amphibious assaults and poised for spiral improvement. It is mounted on the Ultra-Light Tactical Vehicles and can be internally transported by Marine Corps assault support aircraft. This system can defeat manned aircraft and larger UAS with Stinger missiles and defeat smaller UAS with non-kinetic means. The acquisition objective is

21 systems, with Initial Operating Capability (IOC) scheduled for the first quarter of fiscal year 2026.

- **Medium Range Intercept Capability (MRIC):** MRIC is a derivative of the Israeli Iron Dome system, tailored to protect against subsonic and supersonic cruise missiles, manned aircraft, and larger UAS. The Marine Corps is rapidly prototyping an MRIC platoon to provide an initial capability to III MEF by the end of fiscal year 2025, with a complete battery fielded in 2026 and additional batteries in the following years. Three MRIC batteries are planned, one for each of the three Low Altitude Air Defense (LAAD) Battalions. Given the increased attacks on our bases and stations, both home and abroad, installation defense has become of tremendous importance. The Marine Corps has one program that falls into this category.
- **Installation Counter UAS (I-CUAS):** I-CUAS is designed to protect Marine Corps installations by detecting, tracking, identifying, and electromagnetically defeating low-altitude, low-observable UAS. Five of six equipment sets have been fielded in response to an urgent need, with plans to expand to 28 installations starting in fiscal year 2025. The Marine Corps awarded Anduril an Indefinite Delivery/Indefinite Quantity Program of Record contract for the delivery, installation, and sustainment of I-CUAS increasing operational effectiveness and base security. This contract, crucial to mitigating increasing sUAS threats to critical infrastructure, will equip designated Marine Corps installations with the capability to counter these threats.

The systems listed above provide defensive fires to larger formations or critical assets, but due to their size and cost, they are not proliferated enough to protect all of our formations. The Marine Corps is moving fast to field a Dismounted CUAS system that possess limited detection,

kinetic and non-kinetic defeat capability. This system will be man-packable and will begin to fill in some of the capacity gaps we have identified with increased sUAS usage by our adversaries. This Dismounted CUAS system will be the basis for a new program of record listed below.

- **Organic CUAS (O-CUAS):** Our O-CUAS initiative aims to more widely proliferate a counter-UAS capability across the Marine Corps to address the gaps created with the increased use of sUAS by our adversaries. There are two efforts underway; a near-term interim solution in the form of a dismounted CUAS capability and a new program of record that iterates and builds upon the interim solution as new capabilities become available. The near-term Dismounted CUAS system is a man-packable end to end suite, including passive RF detection systems, enhanced rifle optics for CUAS and handheld RF jammers. It is designed for incidental operators, requiring very little training, to defend against small Group 1-2 UAS. Approximately 84 of the rapid fielding Dismounted CUAS systems will be fielded in fiscal year 2025. User feedback from this initial fielding will inform the program of record.

We believe that this new O-CUAS program of record will be the model for faster fielding in the future. The requirement will be for future systems to be operated by incidental operators, not specially trained Marines. It will also allow for the adoption of newer technology such as smaller active and passive radars to detect sUAS and advanced defeat mechanisms such as high-powered microwaves and lasers as they reduce in size to an expeditionary form factor. This program will add to our robust CUAS portfolio and will be deployable to more units across the Marine Corps due to their adaptable size and decreased training requirements. Last, this program will draw upon a baseline communication system that will tie in the known locations of friendly sUAS to cut down on sUAS fratricide.

Similar to the LUCAS program previously mentioned, the Department has identified other rapidly fieldable CUAS programs, such as Home Alone, that we are integrating into our formations that will enhance our ability to detect and defeat this new threat we face.

USMC Fusion Framework

In addition to the materiel modernization, we have also looked at non-material solution such as the creation of the Marine Corps Fusion Center which supports the Fusion Cell and Fusion Framework. The Fusion Framework will enable rapid transition from concept to fielding by facilitating seamless collaboration and handoff between S&T, Requirements, and Acquisition communities at the fully informed level. This cross-functional approach, through a deliberate and expedited force development process, increases the velocity of fielding. Replicator related efforts mark our first use case of the Fusion Cell – we will leverage this momentum on other service priorities in order to realize this velocity.

Collaboration with JCO

The integration of the Marine Corps with the Joint Counter Unmanned Aircraft Systems (UAS) Office (JCO) is crucial for the swift development of counter-UAS capabilities. The JCO's role in coordinating efforts across military services ensures a unified approach, which benefits the Marine Corps in terms of resource sharing and interoperability. By aligning with the JCO's prioritized requirements and streamlined acquisition processes, the Marine Corps can more effectively procure and implement tailored CUAS technologies. The JCO's testing and evaluation support, along with training and exercise integration, enables the Marine Corps to rapidly validate and operationalize new systems. Additionally, the JCO's collaborative efforts

with other agencies and international partners, as well as its focus on standards development, provide the Marine Corps with access to a wealth of knowledge and strategic alliances. This, in turn, fosters innovation and ensures that new systems are compatible with joint and coalition operations. Last, the JCO's strategic and policy guidance ensures that the Marine Corps' CUAS initiatives are aligned with the overarching goals of the Department of Defense, maintaining strategic consistency and operational effectiveness in countering UAS threats.

Summary

The Marine Corps is actively addressing the challenges and opportunities presented by the proliferation of sUAS and the necessity for robust CUAS capabilities. Our modernization efforts are focused on ensuring that Marines are equipped with the tools necessary to maintain a tactical advantage on the modern battlefield, where sUAS technology plays an increasingly critical role in intelligence, surveillance, reconnaissance, and precision strike capabilities.

The integration of sUAS and CUAS systems into the Marine Corps' operational framework is a testament to our commitment to innovation and adaptability. By fielding advanced Group 1 and Group 2 UAS, we are enhancing our ISR capabilities and providing our forces with the means to conduct persistent surveillance and precision strikes. The development and deployment of FPV drone systems further demonstrate our pursuit of technological advancements that empower Marines at the tactical edge.

Our CUAS efforts, including the deployment of systems like MADIS, L-MADIS, MRIC, I-CUAS, and O-CUAS, are essential to protecting our forces from the threat of enemy sUAS. These systems provide a layered defense that is critical for maintaining operational security and freedom of maneuver.

Collaboration with the JCO ensures that our CUAS initiatives are in line with Joint Force requirements and that we benefit from shared knowledge, resources, and interoperability. This partnership is vital for the rapid development, acquisition, and fielding of CUAS solutions that are effective across the spectrum of conflict and in joint and coalition operations.

The Marine Corps is dedicated to remaining the Nation's Force-in-Readiness, and our modernization efforts reflect this commitment. We understand the urgency of these initiatives and the need to outpace the technological advancements of our adversaries. With the support of this Subcommittee and our continued focus on innovation and adaptability, we will ensure that the Marine Corps is prepared to meet the challenges of the future and continue to protect the interests of the United States at home and abroad.

We are grateful for the Subcommittee's support and look forward to our ongoing collaboration to maintain the readiness and modernization of the Marine Corps. Together, we will ensure that our Marines are equipped, prepared, and ever vigilant in the face of evolving threats and the changing character of war. I thank the Subcommittee for your continued advocacy and support of the Naval Services and the Marine Corps. Semper Fidelis.