

NOT FOR PUBLICATION UNTIL RELEASED BY  
THE SENATE ARMED SERVICES COMMITTEE  
SUBCOMMITTEE ON SEAPOWER

STATEMENT OF

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BEFORE THE

SUBCOMMITTEE ON SEAPOWER OF THE  
SENATE ARMED SERVICES COMMITTEE

ON

FY25 SEAPOWER INVESTMENT HEARING

MAY 1, 2024

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Chairman Kaine, Ranking Member Cramer, and distinguished members of the Subcommittee, thank you for the opportunity to appear before you today to address the Department of the Navy's Fiscal Year (FY) 2025 budget request for Seapower capabilities. Maintaining a world-class and world-wide deployable Navy and Marine Corps as a first line of defense for the United States is a continuous effort. The Department of the Navy (DON) appreciates the support of Congress and this Committee for the Department's acquisition, sustainment, research, and development programs that allow us to continue to build and operate a lethal, capable, integrated, and forward-postured Navy and Marine Corps.

The security of our country and preservation of our national interests remains reliant on a superior naval force, strategically postured to adapt to constantly evolving geopolitical challenges and threats. The actions of the Navy and Marine Corps team reassures international allies and partners, deters potential adversaries and responds to those who threaten the lives of our Sailors, Marines and civilian merchant mariners engaged in lawful, international commercial activities. The DON remains focused on the pacing challenge of managing strategic competition with the People's Republic of China (PRC), Russia's illegal war and invasion of Ukraine and the Houthi strikes in the Red Sea. The DON is investing in lethal capabilities across a broad spectrum of platforms and programs to equip our warfighters for potential combat operations with credible and sufficient capability to deter, and when necessary, prevail in conflict. The investments we make today will shape DON's future and support the Secretary's three enduring priorities of strengthening maritime dominance, building a culture of warfighting excellence, and enhancing strategic partnerships.

Since the start of FY 2023 we have delivered 11 battle force ships to the Fleet including three Arleigh Burke Class destroyers (DDG 51), one Virginia Class (SSN), three Littoral Combat Ships (LCS), one Replenishment Oiler (TAO-205), two Spearhead Class expeditionary fast transport dock (EPF), and one Lewis B. Puller class expeditionary sea base (ESB). Today, the Navy has 293 battle force ships, with an additional 87 ships under contract and 58 ships in construction, with the balance of ships in pre-construction activities such as long lead material procurement and planning efforts. The Department has made great strides in recapitalizing Naval aviation platforms. Last year we delivered 60 new aircraft for the Navy and Marine Corps team, including F/A-18E/F production and ongoing procurement and fleet integration of F-35, E-2D, V-22, P-8, KC-130J, CH-53K, VH-92A, and unmanned aircraft MQ-4C, MQ-9A Extended Range (ER), and MQ-25. Naval Aviation is now predominantly comprised of new airframes, made

possible through a deliberate strategy of evolutionary, controlled technical risk development programs. We are continuing making advancements in FY24 for unmanned aviation. The MQ-4 program is meeting schedule objectives, completing Initial Operational Capability (IOC) in July 2023 with its first orbit stand up in INDOPACOM. The Program is currently in the process of standing up its remaining two operational orbits in EUCOM and CENTCOM, scheduled for Q2FY24 and Q1FY25 respectively. The MQ-4 will undergo continuous spiral upgrades throughout the next four years, to include Link-16 targeting with LRASM in 2024 culminating in Full Operational Capability in FY28 enabling near-24/7 ISR coverage in simultaneous theaters of operation.

The Unmanned Carrier Aviation Mission Control System (UMCS) is the system-of-systems required for MQ-25 air vehicle and payload command and control. UMCS integrates multiple networks and systems both afloat and ashore and is synchronized with the MQ-25 to provide a complete capability to the carrier. The program conducted its first C4I Operational Network Evaluation that validated network connectivity over Navy networks and wideband satellite communications in January 2024. The first ground control station will be installed on CVN 77 in fall 2024. Nine systems have been delivered to date and the first carrier-based ground control station installation will complete on CVN 77 in the fall of 2024. UMCS will also be the control system for the Air Wing of the Future.

The first Joint System Verification Test event to validate the initial software build was conducted in January 2024. The Static test article aircraft was completed in January 2024 and will begin testing in spring of 2024. The first EDM aircraft is scheduled to be delivered early 2025 with its first flight scheduled for summer of 2025. MQ-25 is scheduled to reach IOC in 2026.

For the Marine Corps, Unmanned Aerial Vehicle Squadron (VMU)-1 recently conducted phase zero operations with MQ-9A ER, including multisensory imagery reconnaissance, electronic support, unmanned escort of surface forces, and maritime domain awareness in support of the Joint Force and Coalition Partners in CENTCOM, totaling over 3,800 hours. VMU-3 started transition to the MQ-9A ER with flights to begin in 2023.

Over the last year, global events have continued to pressurize the need for rapid change across the Services and the DON has taken note, aggressively seeking and implementing new and improved ways to operate, integrate, and sustain our forces. Russia's ongoing war against Ukraine has affirmed our perception of the modern-day character of war. Specifically, Russia's war against Ukraine has displayed the value of enhanced sensors and long-range precision fires, the importance

of freedom of navigation, and the ability to sustain a force. The war highlights the need for increased industrial capacity, and has shown the genuine value in maintaining relationships among partners and allies. Additionally, it has shown us that persistent, forward presence is essential for the success of our nation's deterrence efforts. Moreover, recent provocations by China, such as flying collection assets directly over the continental United States, clearly show their willingness to compete below the threshold of armed violence.

The Marine Corps' activation of new units, including the 3rd Marine Littoral Regiment and Task Force 62 are indicative of efforts made to compete and reassure allies and partners. Additionally, the establishment of Marine Corps Base (MCB) Camp Blaz on Guam is yet another positive for the Marine Corps and the Joint Force, as it will serve as a critical logistics and inside force enabler. These new organizations and installations will actively participate and support operational concepts, including Distributed Maritime Operations (DMO), Expeditionary Advanced Base Operations (EABO), and Stand-In Forces. However, continued fielding and sustainment of advanced capabilities in mobility, logistics, kill webs, and command and control will be essential for the entire Marine Corps to remain credible and lethal.

The security environment demands ships, aircraft, subs, expeditionary forces, special operations forces, and Sailors ready to fight and win. Readiness is generated across the DON, from shipyards and aviation depots, to our global network of bases and stations, to the steaming and flight hours our Sailors and Marines need to hone their skills. For surface ship maintenance, we are reinforcing our commitment to our industry partners to share future demand signals. We are seeing the benefits of improved maintenance package planning, earlier contract awards, and delivery of long-lead time material to our repair yards. Continued investments in spares supports readiness for training and operational units while simultaneously improving endurance for sustained operations. Funding of some availabilities that cross fiscal year boundaries via the OPN funding pilot also shows positive results. These initiatives enable a stable and predictable workload for our industry partners and ensure a balance of operational requirements with industrial capacity.

The Navy continues to expand opportunities for manned/unmanned teaming (MUMT) and recently stood up 4th Fleet's hybrid fleet providing continuous maritime domain awareness. 4th Fleet also demonstrated a multi-domain SINKEX and manned/unmanned teaming to include operations from the expeditionary fast transport USNS (T-EPF-10). This work expands on the lessons learned from TF-59 and the commercial use technology they continue to experiment with.

Another great example of recent successes of MUMT is when the Navy's USV prototypes

deployed as participants in Integrated Battle Problem (IBP) 23.2 to the Western Pacific in 2023. During this -6-month exercise, our Unmanned Surface Vessel (USV) prototypes Ranger, Mariner, Sea Hunter, Seahawk reached 3,191 hours operating in autonomy mode, totaled 39,10 nautical miles travelled under autonomy control and accomplished 1,333 autonomous missions. They participated in Autonomous Warrior, and one USV visited Yokosuka, Japan. This event is paying dividends to inform our sailors on future CONOPS to include our USVs doing astern refueling from a fleet oiler and operating with a controlling Aegis Destroyer. In order to ensure our people have the right skills to maintain our unmanned capabilities, the Navy recently established the first ever Robotics rating. This rating is designed to train our Sailors to maintain our current and future unmanned capabilities. SURFDEVRON is also establishing Unmanned Surface Vessel Squadron 3 in FY25, a new organization to support the TTP and CONOPS development for small USVs.

The Navy is also supporting and investing in Deputy Secretary of Defenses' Replicator Initiative to build and field attritable autonomous capabilities at scale within 18-24 months.

In keeping with accelerating innovation, the Navy established the Disruptive Capabilities Office (DCO) to produce disruptive warfighting advantages by rapidly identifying and evaluating innovation solution paths for emerging operational problems in the execution and budget years. The DCO will stay aligned with, the Replicator Initiative.

FY24 and FY25 will continue with more MUMT experimentation in order to expand our awareness, command and control, and forward contested logistics. This collaborative approach on innovation, experimentation and integration will leverage industries' pace of technology, allies, and partners' capabilities, while exploring new concepts.

### **The Fiscal Year 2025 President's Budget Request**

The President's FY 2025 budget provides the resources necessary for the Navy and Marine Corps to continue to implement the 2022 National Defense Strategy (NDS). This request builds and sustains the right mix of capabilities to keep the sea lanes open and free, deter conflict, and defend against current and future threats. In alignment with the Secretary of the Navy's priorities, the budget request enables the One Navy-Marine Corps Team to continue strengthening our maritime dominance, building on our culture of warfighting excellence, and enhancing our strategic partnerships.

The FY 2025 budget request is strategy-based and analytically-driven to meet our strategic goals, while balanced with reform targeted at maximizing the value of every dollar. The budget

reflects the Department's commitment to building and sustaining a modernized naval force and operating forward with sufficient capability, size, and mix to deter and defend. FY 2025 continues key investments in advanced technologies and modernization of our current Seapower and Projection forces. In this request we are prioritizing the recapitalization of the strategic ballistic missile submarine, the Columbia Class, which remains the Department's top acquisition priority. It requests the second year of incremental funding for the second Columbia Class SSBN and full funding for two DDG Flight IIIs, one SSN, one FFG, one LPD and the first LSM, while providing the next increment of funding for construction of CVN 80 and CVN 81. The budget supports modernization of our warfighting capabilities across all domains, including research and development (R&D) funding for the future attack submarine (SSN(X)), future destroyer (DDG(X)), the Next Generation Air Dominance (NGAD) manned strike fighter (F/A-XX), Marine Corps Unmanned Expeditionary (MUX) FoS, and recapitalization of the Take Charge and Move Out (TACAMO) mission (E-XX).

The Department requests \$16.2 billion in FY 2025 and includes 75 fixed-wing, rotary-wing, and uncrewed aircraft to modernize our capabilities that can achieve lethal and persistent effects inside adversary weapon engagement zones. This budget funds 53 fixed-wing aircraft to include 13 F-35B and 13 F-35C Lightning II strike fighters to continue transitioning our 4th generation fighter squadron and 27 T-54A multi-engine training system aircraft. Lastly, three MQ-25 Stingrays are requested to conduct aerial refueling and Intelligence, surveillance, and reconnaissance (ISR). The FY 2025 budget prioritizes readiness recovery, continuing prior year gains on ship and aircraft maintenance efforts to improve overall department readiness. It includes significant funding to improve operational readiness, material availability and reduce maintenance periods for submarines. The request continues investment to develop improved war-fighting capabilities across all domains and distributed maritime operations, investing in long range fires and hypersonic weapons as well as increases to unmanned platforms. This budget also develops the Integrated Combat System (ICS) which will deliver decision superiority at rapid speed and enable ships to operate force-wide as an integrated system. USS Winston S. Churchill (DDG 81) began operating with a virtualized Aegis Combat System, a crucial step in the wider transition to a single integrated system, in July of 2023. In 2024, the Arleigh Burke-class destroyer USS Lenah Sutcliffe Higbee (DDG 123), as well as five more ships and four land based test sites are also projected to run virtualized Aegis combat systems.

The budget request increases investment in the Commandant's Force Design priorities by

\$98.7 million, moving programs from concept/experimentation to production within five lines of effort (LOE) – sense and detect; fuse, understand and decide; act; protest; transmission paths; and sustain and move. These investments provide unique capabilities the Marine Corps requires to enable joint force access, sense and make sense of the battlefield, to close kill chains, and apply lethal fires when required to deter or defeat adversaries.

The FY 2025 budget continues investment in the defense industrial base to ensure the continued viability of the crucial businesses and infrastructure needed to ensure our ships, aircraft, and ground equipment are available when needed for the defense of the nation and our interests abroad. The budget request includes a \$8.8 billion investment across the FYDP in the submarine industrial base to support serial production of Columbia Class nuclear-powered, ballistic missile submarines (SSBN) in parallel with Virginia Class nuclear-powered attack submarine (SSN) construction and sustainment of the existing submarine force. The Navy is leveraging the implementation of dedicated workforce development incentives on Navy contracts to attract, recruit, develop and retain the workforce at our nation's shipbuilding partners. PB25 continues the Workforce Development Incentives awarded in FY 2023 on the DDG-51 MYP contracts (FY23-FY27). Additionally, the Navy is implementing dedicated Workforce Development Incentives on upcoming new contract awards for Virginia Class, San Antonio Class, and Medium Landing Ship.

## **Summary**

The Navy and Marine Corps team continues to meet challenges head on – in cyberspace, in outer space, on the sea, under the sea, in the littorals and in the air every single day. With Congress' support, the Department of the Navy is focused on rapidly researching, developing, acquiring, and fielding the material solutions required to be more lethal, sustainable, resilient, survivable, agile, and responsive. We are committed to providing the Nation with a combat-credible, dominant, globally responsive naval force to keep the sea lanes open, deter aggression, and when called upon, decisively win our Nation's wars.

Programmatic details regarding Navy and Marine Corps capabilities are summarized in the following section.

# U.S. NAVY AND MARINE CORPS SEAPOWER CAPABILITIES

## SHIP PROGRAMS

### **Submarines**

The Columbia Class SSBN, with the TRIDENT D5 Life Extension 2 (D5LE2) will ensure the effectiveness and availability of the nation's Sea Based Strategic Deterrent (SBSD) through the 2080s. Columbia Class is the Navy's #1 acquisition priority as its construction and delivery are critical to pace the retirement of current ballistic missile submarines.

The lead ship of the class, District of Columbia, started full construction in FY 2021. This ship must be on patrol by fiscal year 2031 to meet USSTRATCOM requirements. While the District of Columbia is progressing into the next phases of construction the margin to the 84-month contract delivery schedule has been consumed and the shipbuilders' performance must improve to regain schedule. The Navy is driving both General Dynamics Electric Boat (GDEB) and Huntington Ingalls Newport News Shipbuilding (HII-NNS) to identify mitigations to recover critical path schedule, improve overall performance, and deliver on time. Because of the significance of the SBSBD mission, the Navy is holistically managing SSBN inventory across the portfolio using targeted Ohio-Class SSBN service life extensions to mitigate possible Columbia delays. The second ship of the class, Wisconsin, commenced full construction in October 2023 and learning is being demonstrated through reduced spans for early construction activities. The FY 2025 budget request includes the second year of incremental funding for Wisconsin, as well as funding for advance procurement, advance construction and continuous production across the class. Continued funding for these initiatives are critical to reducing construction schedule risk and enabling cost savings across the class. The Navy appreciates Congress's continued support of these authorities.

As of March 2024, the Navy has taken delivery of 22 Virginia Class submarines with 16 additional under contract. Hyman G Rickover (SSN 795) delivered October 2023 and New Jersey (SSN 796) is planned to deliver in April 2024. The second ship of the Block V contract will introduce the Virginia Payload Module, which helps mitigate the loss of undersea strike capability with the retirement of SSGNs. All Block V ships will incorporate Acoustic Superiority program improvements. Virginia Class construction performance continues to be challenged to meet the required two per year delivery cadence and is currently at ~1.2/year. With Congressional approval, the Navy intends to award the next Virginia multi-year procurement (MYP) contract, Block VI, in FY25 which will include nine ships. Given the challenges in meeting the required construction

rates, the FY 2025 budget includes funding for one Virginia SSN, which provides an opportunity for the shipbuilders to balance production for VCS Block VI construction and serial Columbia production in FY26 and allows for maturation of improvements in manufacturing, outfitting and assembly and test, as well as industrial base investments. The FY25 budget also includes advance procurement (AP) and economic order quantity (EOQ) funding in support of Block VI ships. AP and EOQ allows for critical sub-tier vendors to be kept on cadence and support the procurement of long lead materials and components that are critical to the program. Cost to complete funding for Block IV and V boats are also included in this budget and well as funding for continued development of capabilities and technologies for future blocks.

The submarine industrial base (SIB), consisting of the public shipyards and two prime shipbuilders, General Dynamics Electric Boat (GDEB) and Huntington Ingalls Industries Newport News Shipbuilding (HII-NNS), along with the 16,000 suppliers across the country, supports both new-construction submarines and sustainment of the in-service submarine fleet. The SIB faces an increase in demand across the enterprise as the Navy ramps up production of the Columbia Class, continues to increase production to two Virginia Class submarines per year beginning in FY26, while increasing SSN operational availability and supporting international commitments under the AUKUS partnership. The unprecedented demands on the submarine industrial base require a whole-of-nation effort. Our shipbuilders and their supporting high-tech supplier base are building up from a lengthy drawdown and our SIB requires a once-in-a-generation effort to modernize our force and develop our allies' submarine capabilities so we can fight alongside each other. The Navy appreciates congressional support to address these challenges. In 2021 and again this year, the Navy and DoD performed a study looking at the health of the industrial base. The FY 2025 budget request expands upon the foundational investments made in prior budget cycles and are critical to shore up the SIB to produce Virginia and Columbia, sustain in-service submarines and ramp up to the build rate necessary to support AUKUS requirements. Investments are targeted in six key areas to include infrastructure, supplier development, scaling of new technologies, workforce development, strategic outsourcing and government oversight of these efforts. The Navy has seen significant benefit from investments made to date including installation of multiple additive manufactured components additively manufactured components on in-service submarines; graduation and placement of over 300 people from the Accelerated Training in Defense Manufacturing program, which will scale to train and place 800-1000 skilled trades by FY25, and

increased infrastructure for submarine production through the groundbreaking of the multi-class submarine production facility at Newport News, VA.

The FY 2025 budget continues the efforts in support of requirements development, Analysis of Alternatives execution, concept design and technology development for the Future Attack Submarine (SSN(X)). As the Columbia design workforce efforts diminish, SSN(X) design efforts will ramp up, thereby maintaining the strength of the submarine design workforce.

### **Aircraft Carriers (CVNs)**

The FY 2025 budget fully funds the operations and maintenance of 12 In-Service Aircraft Carriers, and three Ford Class Carriers under construction. The FY 2025 budget continues investment in Sailor Quality of Service at Newport News Shipbuilding to improve the living conditions of our Sailors onboard aircraft carriers and other ships undergoing extensive maintenance or construction.

The USS Gerald R Ford (CVN 78) completed a highly successful deployment to support international partners and allies, with critical new systems performing well. CVN 78 spent 239 days underway, sailed over 83,476 nautical miles, and worked with 17 nations throughout its deployment during critical strategic exercises. Her crew and embarked air wing logged over 17,826 flight hours and 10,396 sorties, conducted 33,444 flight deck moves, 3,124 hangar bay aircraft moves, 2,883 aircraft elevator moves, 16,351 aircraft fueling evolutions, and transferred 8,850 pallets of cargo and mail.

John F Kennedy (CVN 79) is over 90 percent construction complete and scheduled for delivery in the fourth quarter of 2025. Enterprise (CVN 80) construction is 37 percent complete, and Doris Miller (CVN 81) 14 percent complete with material procurements pacing ahead of previous Ford Class carriers. The Navy remains committed to reducing and controlling the cost of Ford Class aircraft carriers and continues to benefit from the \$4 billion acquisition savings achieved through the two-ship block buy contract award for CVN 80 and CVN 81. The aircraft carrier industrial base has significant overlap with the submarine industrial base, both at the shipyard and at major suppliers. The Navy's investments in SIB in many cases also benefit aircraft carrier programs by improving performance, efficiency, and capacity at these critical suppliers.

The Nimitz Class Refueling Complex Overhaul (RCOH) is the refueling of the ship's reactors and full recapitalization of the carrier in support of the second half of its service life. USS John C Stennis (CVN 74) is 61 percent complete, and USS Harry S Truman (CVN 75) awarded its

RCOH execution Advanced Planning (AP) contract earlier this year.

The Navy has completed the Environmental Impact Study (EIS) for the disposal of decommissioned, defueled Ex-Enterprise (CVN 65), and announced via Record of Decision (ROD) in September 2023 to select and implement a full commercial dismantlement. This decision will allow the Navy to reduce the Navy inactive ship inventory, eliminate costs associated with maintaining the ship in a safe stowage condition, and dispose of legacy radiological and hazardous wastes in an environmentally responsible manner, while meeting the operational needs of the Navy.

### **Large Surface Combatants**

Arleigh Burke Class (DDG 51) destroyers are the workhorse of the Fleet, with 73 ships delivered as of February 2024, including the very first DDG 51 FLT III ship. At the beginning of August 2023, the Navy awarded the next DDG 51 FLT III Multi-Year Procurement contracts to BIW and HII. These contracts awarded 9 DDG 51 FLT III ships (6 ships to HII and 3 ships to BIW) across the FY23 FYDP. Additionally, each shipbuilder's contract contained options for additional ships over the next five years, providing the Navy and Congress flexibility to increase DDG 51 build rates, if authorized and appropriated. FY23 option ship was awarded to HII at the end of August 2023. As of today, the DDG 51 shipbuilders have a total of 26 DDG-51s under contract and 11 ships in various stages of production.

Flight III DDG 51s will provide enhanced Integrated Air and Missile Defense (IAMD) with the AN/SPY-6(V)1 (SPY-6) and AEGIS Baseline 10 (BL10). SPY-6 meets the growing ballistic missile threat by improving radar sensitivity and enabling longer range detection of increasingly complex threats. The program demonstrated design maturity through its successful completion of all developmental testing. SPY-6 is in production for delivery to support Flight III ships. Initial shipboard testing of the radar and combat system has commenced on the first DDG 51 Flight III ship, USS Jack H Lucas (DDG 125), which was delivered in June 2023.

Integration testing for the Flight III Combat System continues to progress steadily. Testing of BL10 integration with the SPY-6 array at a land-based development yielded significant risk reduction of first-time integration at the waterfront aboard DDG 125. Notably, the incorporation of software modifications identified during these tests facilitated the delivery of multiple combat system software increments to DDG 125 each adding capability and increasing stability, readiness, and performance. Each of these increments has enhanced the vessel's capabilities, bolstering its stability, readiness, and

overall performance. The first at-sea Live Fire Event completed in September 2023 with the successful launch of a Standard Missile at a drone target. Additionally, in Flight Test Other (FTX-23) DDG 125 demonstrated the first BL10, BMD 6, and SPY-6 integrated detection, tracking, and simulated engagement of a target at sea in February 2024.

The Zumwalt Class (DDG 1000) guided missile destroyers are multi-mission surface combatants designed to provide long-range, offensive surface strike capabilities. The DDG 1000 program continues to accomplish first-time integration of unique combat systems elements, complete Post Delivery Test and Trials, demonstrate operational performance and start the installation of the first Conventional Prompt Strike (CPS) hypersonic weapon system on a maritime platform. In FY 2023, DDG 1000 started her Building Yard Modernization Period (BYMP) at HII shipyard. DDG 1001 is completing Post Delivery Test and Trials (PDT&T) with combat system and final ship delivery planned for July 2024. DDG 1002 continues her Combat Systems Activation (CSA) period at HII.

DDG(X) will be the next enduring large surface combatant (LSC) that follows the highly successful DDG 51 Class. Like DDG 51's evolution from CG 47, the initial flight of DDG(X) is a new hull form built around the DDG 51 Flight III's SPY-6 with AEGIS BL10 to deliberately reduce execution risk. DDG(X) will provide significant increases in range, efficiency, and time-on-station compared to the DDG 51 class, providing Fleet Commanders with increased operational flexibility and decreasing the demand on Fleet Logistics. When deployed with the FFG 62 class, which is designed to relieve LSCs of lower-tier missions, the resulting Fleet mix will directly contribute to the Navy's concept of DMO.

DDG(X) will provide the flexibility and margins (space, weight, power, and cooling reservations) to accommodate required future capacity and capability upgrades to counter evolving threats. The Navy is committed to a smooth and successful transition from DDG 51 to DDG(X) in order to preserve the critical shipbuilding and supplier industrial base. Additionally, the Navy is executing a collaborative design process with current DDG 51 shipyards and transitioning to a proven limited competition model between these shipyards at the right point in ship construction.

In 2023, the Navy took this opportunity to re-engage with Surface Warfare leadership and Fleet Commanders to ensure that the final Top Level Requirements (TLRs) represent the necessary warfighting capabilities in the next enduring LSC. This resulting validation across the Requirement and Acquisition communities will ensure that the delivered capability is aligned with and will support future operational needs.

## **Small Surface Combatants**

The Constellation Class Frigate (FFG 62) is the evolution of small surface combatants with increased lethality, survivability, and improved capability to support the full range of military operations as part of a more lethal Joint Force. The FFG 62 acquisition strategy is informed by previous shipbuilding programs and takes advantage of proven systems that increase commonality across platforms including the SPY-6 (V)3 radar, Vertical Launch System (VLS) missile launchers, and Aegis combat system software. The first four ships, the future USS Constellation, USS Congress, USS Chesapeake, and USS LaFayette are under contract with USS Constellation under construction. There have been schedule delays experienced in FY 2023, and Navy and the shipbuilder have taken action to complete the design and design reviews are ongoing to ensure achievement of required capability. The Navy is confident in the capability FFG 62 will deliver to the Fleet!

The LCS program will deliver its final ships by the end of FY25, having delivered 31 of the 35 total funded ships to date. As the LCS Class matures, the Navy continues to invest in making the ships more lethal and more survivable to elevate their value in the strategic fight. Eight LCS platforms have Naval Strike Missile (NSM) installed, and all LCS hulls are programmed to receive the weapon system by FY32. LCS Lethality and Survivability (L&S) upgrades will begin in FY 2025 as the Navy continues development of a Common Combat System that utilizes program of record government furnished equipment in place of shipbuilder procured contractor furnished equipment. In addition to enhancing lethality, this transition will vastly improve the Department's ability to affordably maintain and sustain the ships' combat and mission systems. Additionally, USS MOBILE successfully employed Aerosonde Uncrewed Aircraft System (UAS) as it conducted counter-UAS testing with enhanced surveillance capabilities, and USS SAVANNAH executed a successful proof-of-concept launch of an SM-6 missile from a MK 70 Payload Delivery System. Further, the LCS Strike team and Task Force LCS continue to produce measurable increases in materiel availability, as demonstrated by the completion of a successful 26-month deployment of USS Charleston in 7<sup>th</sup> Fleet as well as USS OAKLAND, meeting all operational commitments for 531 days with no mission days lost. In the past year, the Navy reached a significant milestone in modernizing mine countermeasure (MCM) capability, as the MCM Mission Package (MP) declared IOC in March, 2023. Initial deployments of the MCM MPs aboard Independence Variant LCS will

begin in FY 2025, and MCM MPs remain on track to fully replace the aging Avenger-Class MCM fleet by the end of FY 2027.

### **Large Deck Amphibious Warfare Ships**

Amphibious warfare ships remain a critical component of the Nation's global forward presence, supporting deterrence, crisis and contingency response missions and providing decision space for our nation's leaders. These ships support the amphibious assault, special operations, and expeditionary warfare missions of U.S. Marines and often Special Operations Forces by providing sovereign bases at sea, offering flexible services that provide shelter and sustainment, and enabling Marines, Sailors, and Special Operations Forces to plan and train a tailorable force.

The America Class Amphibious Assault Ships (LHA 6) program provides a lethal and versatile platform to serve as the flagship for the Expeditionary Strike Group (ESG)/Amphibious Ready Group (ARG) now and in the future. Among other capabilities, these ships host the fifth-generation F-35B Joint Strike Fighter (JSF) aircraft that are critical to maintaining air combat superiority. Bougainville (LHA 8), first of the LHA Flt I class, is at 63 percent construction complete and was christened in 2023. LHA 8 includes a well deck to increase operational flexibility and a reduced island structure increasing flight deck space to enhance aviation capability. Fallujah (LHA 9) will be the second Flight I ship and is a rollover of the LHA 8 design with obsolescence-related changes incorporated. Its construction contract was awarded in October 2022 and fabrication started in December 2022. Following advance procurement funding appropriated in FY 2023, this year's budget requests full funding of LHA 10 as an FY 2027 ship.

### **Other Amphibious Warfare Ships**

San Antonio Class Amphibious Transport Docks (LPD 17) provide the ability to operate offensively in a medium-density, multi-threat, anti-access littoral environment by being a seabase for the Marine Expeditionary Unit (MEU), capable of launching and recovering helicopters, tiltrotor aircraft, landing craft, amphibious vehicles, and Special Operations Forces. The San Antonio Class LPD is an essential component to reaching the statutory requirement of not less than 31 amphibious warfare ships, and continues to be affordably constructed with capabilities critical to providing strategic mobility, force projection, and the range to campaign across the globe. Richard M McCool Jr (LPD 29) conducted Acceptance Trials in February of this year with ship delivery this spring. LPD 29 will be the first ship operating the SPY-6 (V)2 rotating variant of Enterprise Air

Surveillance Radar (EASR), outfitting the ship with the latest technology and most sustainable equipment. LPD 28 and LPD 29 are the last of the LPD 17 Flight I line to be constructed and are the transition ships to the LPD 17 Flight II. This year's budget request includes the procurement of three LPD 17 Flight II ships in FY25, FY27 and FY29, a testament to the Navy's commitment to maintain a 31 amphibious ship fleet at the most cost efficient pace.

## **Landing Craft**

The Ship to Shore Connector (SSC) program continues to make progress on craft quality and delivery cadence. Resolution of early technical issues have enabled production to progress as originally envisioned producing four craft per year, with the delivery of Hull 109 anticipated in March 2024. While no SSC are requested in FY 2025, SSC procurement is planned to continue in future Fiscal Years. Four craft were delivered in FY23, and the program is on track to deliver four craft in FY24. The additional craft provided by Congress have been instrumental in buying craft efficiently and supporting the unique vendor base.

The Navy is also replacing its aging Landing Craft Utility (LCU) fleet with the LCU 1700 program which recapitalizes the capabilities and flexibility currently provided by the LCU 1610 Class in a more fuel efficient, cost effective, and updated design. The FY25 budget request reflects a strategic pause in procurements to allow time to reevaluate the LCU 1700 acquisition approach to ensure the Navy is getting craft delivered on time and on budget.

## **Expeditionary, Auxiliary, and Other Vessels**

Expeditionary support vessels are flexible platforms used across a broad range of military operations in support of multiple operational phases. The Medium Landing Ship (LSM) is planned to fill the capability gap that exists in the littoral environment between the Navy's large, globally deployable, high endurance, multipurpose amphibious warfare ships and smaller complementary landing craft. The Navy and Marine Corp have collaboratively finalized the best mix of Industry-informed requirements to efficiently and affordably procure LSM in support of integrated deterrence and distributed mobility, maneuver and sustainment for littoral expeditionary forces. Release of Detailed Design and Construction (DD&C) Request for Proposal (RFP) occurred in January 2024. The FY 2025 funding request supports lead hull contract award. The program is also exploring alternate acquisition approaches to deliver LSMs more rapidly to the Fleet.

The LSM will be the primary maneuver and sustainment platform for Marine elements of the Stand-in Force (SIF). However, current programmatic timeline for LSM delivery does not support the requirements to provide littoral mobility for one Marine Regiment until FY 2034. In the interim, the DON is evaluating a diverse group of existing naval platforms (e.g., EPF, Commercial Charters, Ancillary Surface Connectors, etc.) to serve as the Littoral Maneuver Bridging Solution (LMBS) to support SIF operating in the Indo-Pacific. For example, the Marine Corps has chartered a commercial Stern Landing Vessel (SLV) to experiment and prototype the SLV's use in providing logistics/sustainment capability to support SIF conducting EABO. This vessel provides Marine Corps formations with the ability to use littoral waterspace for maneuver, distribution, and resupply using a roll-on/roll-off vessel capable of beaching in various shore environments. On February 13, 2023, the first SLV was officially undocked from its dry-dock location and underwent final shipyard modifications, various trials, and inspections. In addition to the SLV, the Marine Corps is pursuing a future strategy for a smaller craft to enable littoral maneuver, distribution, and sustainment – the Ancillary Surface Connector (ASC). ASC will be built by industry to answer a Service requirement for a III Marine Expeditionary Force inter-island connector that supports the maneuver of forces within the littoral environment and delivery of logistics over the “last tactical mile.” Furthermore, the Fast Transport (EPF) adds value to the LMBS through rapid, agile, intra-theater maneuver of personnel and equipment in support of Distributed Maritime Operations (DMO) and Littoral Operations in a Contested Environment (LCOE). These vessels have and continue to support critical partnerships throughout the Indo-Pacific and the globe, to include theater security cooperation events, Humanitarian Assistance, Disaster Relief missions such as Exercise Talisman Sabre and evacuation efforts.

The EPF Flight II (EPFs 14-16) does not have the autonomous capability of EPF 13 but is a modified EPF design that incorporates engineering, design and operational improvements which will provide Combatant Commanders with a more flexible and capable platform and enable an embarkable Role 2 Enhanced (R2E) medical capability. EPF Flight II will be capable of conducting the same missions conducted by the EPF but with a reduced lift capacity.

EMS is an EPF variant that has a similar shallow draft, is all aluminum, and is a commercial-based catamaran design. However, it is optimized to provide dedicated R2E medical care and intra-theater patient movement. The EMS will provide combatant commanders high-speed transport mobility to move casualties over operational distances. FY 2023 appropriations included

the contract award of two Expeditionary Medical Ships (EMS). Construction of the first EMS ship is expected to start in FY 2025.

The Expeditionary Sea Base (ESB) is a modified commercial ship that acts as an afloat forward staging base. ESBs are versatile ships that provide a flight deck platform, mission deck and cargo capacity, and command and control capabilities for mission planning and execution. The Navy accepted delivery of USS John L. Canley (ESB6) in March 2023 and commissioned her in February 2024. Robert E. Simanek's (ESB 7) keel was laid in October 2022. Hector A. Cafferata Jr. (ESB 8) started construction in August 2023.

The John Lewis (T-AO 205) Class fleet replenishment oiler recapitalizes the T-AO 187 Class as the primary refuel asset vital to ensuring Navy intra-theater replenishment capabilities. USNS Harvey Milk, T-AO 206, delivered in July 2023. T-AO hulls 207 to 213 are under contract. Cost and schedule performance is starting to stabilize with the leveling of inflation, serial production and learning. PB25 does not request additional T-AOs as the program finalizes a block buy acquisition strategy for T-AO 214 – 221, leveraging authorities provided by Congress.

Ten T-ATS Towing, Salvage, and Rescue vessels are currently under production across two Gulf Coast shipyards: five hulls at Bollinger Houma Shipyard and five hulls at Austal USA. In April 2022, Austal USA opened their first steel production line utilizing DPA Title III funding to expand their shipyard capability to enable construction of both steel and aluminum ships. The Auxiliary General Ocean Surveillance ships (T-AGOS 25 Class) consists of a ten -vessel program of record. Austal USA was awarded a Detail Design Contract for the lead ship in May 2023 with options for lead ship construction as well as construction of 6 additional ships. FY25 reflects a gap year to allow sufficient time to complete detailed design work on the lead hull. The T-AGOS 25 ships will replace the T-AGOS 19 and T-AGOS 23 Class ships.

### **Strategic Sealift**

The DON remains committed to sealift readiness and recapitalization, working with our partners in USTRANSCOM and the Maritime Administration (MARAD). This recapitalization strategy includes procurement and refurbishment of used commercial Roll-On Roll-Off ships for replacement of aging Ready Reserve Force capacity. The buy-used recapitalization program provides a stable acquisition profile with forecasted maintenance and repair costs to meet strategic mobility requirements at a moderate level of risk. On February 27, 2023, MARAD completed the purchase of three ships that recapitalize over 660,000 square feet of Sealift capacity. The purchase of the three

ships that make up the Jolly class was the second purchase of the Buy-Used program which began with the purchase of the first used vessels in March 2022.

In FY24, the first two used vessels (Cape Arundel and Cape Cortes), received their Certificate of Inspection, conducted sea trials, relocated from vessel acquisition outfitting pier to final layberth location, completed post sea trial regulatory findings, and enter into the Ready Reserve Force with 432,000 square feet of capacity. The work to modify and outfit these used vessels will continue to be performed by U.S. shipyards.

In parallel with recapitalizing strategic sealift, the Navy and Marine Corps are in the early stages of developing requirements for the next generation of maritime prepositioned ships. A new construction program is the most appropriate to substitute to the current Maritime Prepositioning Force (MPF) ship portfolio. This is due to capability adaptations to a concept oriented on campaigning that utilizes sea basing to persistently project, sustain, and maintain discrete forces forward in the competition space. In FY23, military sealift command (MSC) transitioned eight MPF vessels from full operational status (FOS) to a reduced operational status (ROS) located in CONUS. Vessels were placed in ROS status as part of cost-reduction offset to prioritize higher Navy priorities. In FY24, the Navy is developing initial new construction concept designs and top-level requirements for the future MPF to support a first ship delivery in approximately FY33.

### **Sustainment, Modernization, Service Life Extensions and Divestments**

The Navy continues to prioritize readiness to ensure the Navy is postured to deter, defend, and win against any threat at any time. Proper platform maintenance is a critical enabler to ensure the Navy is ready to fight. For surface ship maintenance, completing availabilities on time and with required work completed remains the top focus and challenge to the maintenance and acquisition communities as Fleet Commanders must be able to depend on every player on the field to be on-time and ready. To support this, over the last five years, the Navy has been utilizing data analytics to improve availability planning, award contracts, procure material, and integrate schedules, so industry and government can better maximize every day in an availability and continue to drive out Days of Maintenance Delay. Additionally, the Navy is continuing its efforts to strengthen partnerships with industry via proper work package planning and early communication of workload projections for every surface Navy homeport to allow industry to better predict and manage its workload, infrastructure, and workforce.

In addition to the Navy's focus on maintaining the Fleet, the Navy team is executing critical

modernization efforts on key platforms to ensure the Fleet has relevant combat capability. The Navy is continuing its program to invest \$17 billion over 17 years to modernize 25 Flight IIA DDGs to provide combat capability nearly identical to our future DDG Flight III ships, enabling the Navy to accelerate delivery of Terminal Defense and Long-Range Fires capabilities to the fleet and ensure these hulls are being upgraded to maintain relevance and reliability through their expected service life (ESL). The FY 2025 budget includes funding for the third procurement of a SPY-6 variant for back-fit on two in-service DDGs, the combined hull, mechanical & electrical and combat system/AEGIS modernization upgrade installations on two DDGs in FY 2025, the necessary procurements for additional installs planned in FY 2026 and 2027, and the procurement of another two high efficiency super chiller shipset planned for installation in FY 2028. The Navy has worked to incorporate Cruiser Modernization lessons learned into the DDG Modernization acquisition strategy, including availability planning, solicitation strategies, appropriate contract types, system lay-up and reactivation, crew manning, and training. All of this collectively has been incorporated into the Navy's "crawl-walk-run" approach for the program that will enable the collective Navy/industry team to be properly prepared and experienced for the magnitude and complexity of the upcoming full DDG Mod 2.0 availabilities, the first of which is scheduled for FY 2028.

The Navy is committed to balancing the submarine maintenance workload within the public and private shipyards, as well as maintaining a healthy industrial base for both submarine maintenance and new construction. The Navy will continue its investments in the VIRGINIA Class Material strategy to improve material stock level and continue ramping outsourced work from public shipyards to the private sector to match public shipyard demand and capacity. The Navy will continue to work with our industry partners to improve cost and schedule performance for submarine maintenance, providing valuable maintenance surge capacity.

The National Defense Strategy (NDS) transforms the foundation of the future force by designing "transition pathways to divest from systems that are less relevant to advancing the force planning guidance." PB-25 supports the NDS by divesting of less survivable force structure, resource-intensive weapon systems, and less-relevant combat platforms that are not critical to maintaining our warfighting advantage against the People's Republic of China (PRC) and Russia. Careful prioritization in the near-term will result in a Navy battle force that is more ready, sustainable, and lethal. The Navy remains committed to ensuring resources are most effectively utilized and directly aligned to supporting NDS priorities, and to support this, the Navy's FY 2025 budget proposes decommissioning 19 ships in FY 2025. Of these 19 ships, nine are at or beyond

ESL and ten are prior to ESL. The inactivation of the nine ships at or beyond their ESL is a standard practice at the end of a ship's lifecycle. Legacy platforms that are extremely expensive to repair and maintain and cannot stay relevant in contested environments must be retired in order to invest in essential capabilities the Navy needs for our national security, and the Navy has identified ten ships to divest of in FY 2025 (2 CG, 1 LSD, 2 LCS, 4 T-EPF, 1 T-ESD) to support this larger effort. The DON assesses no potential gaps in warfighting capability will result from removing the projected ships from service. Navy will only grow ready, lethal, warfighting capacity at a rate supported by fiscal guidance and our ability to sustain that capacity in the future. Therefore, PB-25 does not resource capacity beyond what can be reasonably sustained – manning, training, maintenance, ordnance, operations, and future modernization.

### **Shipyard Infrastructure Optimization Program (SIOP)**

The Navy's four public shipyards perform an essential role in national defense by executing maintenance on submarines and aircraft carriers to provide combat-ready ships to the fleet. SIOP will deliver required dry dock repairs and upgrades to support current and planned future classes of nuclear-powered aircraft carriers and submarines, optimize workflow within the shipyards through significant changes to their physical layout, and recapitalize industrial plant equipment with modern technology that will substantially increase productivity and safety. SIOP will improve the Quality of Service for the over 37,000 engineers, artisans, and sailors who work at the four public shipyards.

The Navy instituted a first-of-its-kind infrastructure acquisition process for SIOP, similar to major defense acquisition programs. In 2023, the SIOP-tailored acquisition process selected a preferred alternative, determined capability requirements, and established threshold and objective parameters to guide overall cost, schedule, and performance at each shipyard. The master plan to deliver these capabilities to Pearl Harbor Naval Shipyard (PHNS) has been completed.

The Navy is instituting a first-of-its-kind infrastructure acquisition process for SIOP, similar to major defense acquisition programs. The SIOP-tailored acquisition process will guide program execution and establishes threshold and objective parameters for overall cost, schedule, and performance of the SIOP at each shipyard with total program cost.

With the tremendous support received from Congress – to include the \$2.0 billion appropriated in FY 2023 – the program is advancing three lines of effort: dry dock modernization, optimization, and capital equipment. The Navy has \$6 billion of SIOP construction under contract and \$577 million of capital equipment projects in progress. In Fiscal Year 2023, the program started

construction of a new dry dock at Pearl Harbor Naval Shipyard, awarded \$240 million in repair projects to maintain mission readiness at the four shipyards, and continued construction of dry docks at Norfolk and Portsmouth Naval Shipyards. During the year, SIOP completed electrical upgrades of Puget Sound Dry Dock 4 and Pier 3; renovation of Dry Dock 4, flood protection improvements of Dry Docks 2 and 3, and the Production Training Facility at Norfolk; and completed caisson flood protection improvements of Dry Docks 2 and 3 and the renovation of Berth 6 at Portsmouth. To date, SIOP has delivered 138 items of capitalized industrial plant equipment to the shipyards. The President's Fiscal Year 2025 budget continues the Administration's commitment to this program and requests \$2.8 billion for SIOP.

### **Unmanned Surface and Undersea Vehicles**

The DON remains committed to maturing the enabling and core technologies needed to deliver unmanned surface and undersea capabilities. These capabilities will serve as the backbone to achieve the hybrid fleet of the future. Employing a Family of Systems in both surface and undersea domains increases our magazine depth, standoff, and battlespace awareness while providing protection of our manned platforms and reducing risk to our sailors and marines. In FY2025, we will continue to mature our USV systems engineering pillars. We have made great strides in demonstrating reliable Hull, Mechanical and Electrical capability with our industry partners via land based testing as well as advancing our networks and radios; common core USV Combat System; vessel control software; sensory perception and mission autonomy. During 2023, USV Division 1 (USVDIV 1) successfully conducted a developmental deployment to Seventh Fleet AOR, transiting more than 39,000nm and over 1300 hours of autonomous operation.

The Navy has an operational MUSV Land-Based Test Site and will continue operating several USV prototypes including three Overlord USVs (Ranger, Mariner and Vanguard), and two Medium Displacement USVs (Sea Hunter and SeaHawk) during 2024 and 2025. In September 2023, the MCM USV program established its ACAT II Program of Record (PoR) and was approved for Full Rate Production (FRP). The MCM USV program delivers multiple capabilities to the MCM MP requirements via payload delivery systems to include mine-hunting, and minesweeping. The program continues to develop Barracuda to provide future mine neutralizing capability. The Navy remains committed to investing in a family of Unmanned Undersea Vehicles (UUVs) designed to expand the DON's reach and persistence. In December 2023, the Navy took delivery of the Extra Large Unmanned Undersea Vehicle (XLUUV) test asset which is a pier-launched UUV capable of carrying large payloads and is on schedule to deliver and test the remaining prototypes in 2024 and 2025. In

FY 2023 the Navy paused funding of the Large Displacement Unmanned Undersea Vehicle (LDUUV), which will support Subsea and Seabed Warfare (SSW) and Intelligence Preparation of the Operating Environment. However, the Navy restored funding in FY 2024 and prototype testing resumed in February 2024. The Navy is also partnering with DIU to evaluate and test large UUV commercial capabilities.

The submarine community has successfully launched and recovered both small and medium sized UUVs in FY2023 and is continuing to work on converting existing medium UUVs for torpedo tube launch and recovery capabilities during FY2024. Lionfish is the next generation fully cyber compliant, small UUV with increased capabilities relative to the legacy MK18 MOD1 system. The Navy awarded a 5-year Lionfish production contract to Huntington Ingalls Industries (HII) in September 2023 supporting procurements for Navy Expeditionary, Naval Special Warfare (NSW), and USMC forces. The Navy will continue to develop and procure small and medium UUV PoRs during FY2024 and 2025 increasing subsea and seabed warfare reach and persistence.

The Marine Corps plans in FY2024 continue developing the Long-Range Unmanned Surface Vessel (LRUSV). In July 2023, the Combat Development Directorate, Deputy Commandant for Capability Development and Integration issued a Capability Requirement Change shifting LRUSV focus from a fires mission payload in support of the Marine Littoral Regiment (MLR) to a sensor and communication mission payload as part of the Maritime Reconnaissance Company (MRC) and to pursue risk reduction activities using the prototype Unmanned Surface Vessel (USV) and Contact Vessel (CV) as surrogates for a future USV and Multi-Mission Reconnaissance Craft (MMRC).

In accordance with our plans to build a DMO hybrid fleet, the Navy and Marine Corps are conducting studies and experimentations to assess the supporting infrastructure requirements of unmanned systems, to include “motherships”. Additionally, the Navy kicked off an Unmanned Systems Expeditionary Support and Integration Requirements Evaluation Team that is looking at ashore or afloat employment capability gaps for mobility, sustainment and command and control of current and future unmanned systems at sea in all domains.

#### Combat Systems

The Navy remains at the forefront of global surface and submarine combat systems, continually investing in cutting-edge technology to bolster the capabilities in the Fleet. Embracing the ever-evolving landscape of commercial technology, the Navy strives to provide reliable and real-time

capabilities, breaking from traditional hardware-software dependencies. Investments continue for the Forge and the Foundry, the Navy's combat system software and hardware factories, to uphold industry standards such as Infrastructure as a Service, Platform as a Service, and Software as a Service. This approach enables the rapid deployment of iterative updates to the Aegis Weapon System and embeds continuous innovation processes into the delivery and maintenance of shipboard hardware. Increased operator feedback from Red Sea operations are driving smaller, more frequent software deliveries to the Fleet. Integrated Combat System development efforts continue within the Navy, with both new construction and existing Aegis BL9 and BL10 ships receiving upgrades through Capability Packages. In February 2024, Arleigh Burke-class destroyer USS Winston S. Churchill (DDG 81) became the first ship running a fully virtualized Aegis Combat System to successfully intercept an air target with a missile, proving that a virtualized system can work on an operational ship in a combat environment. This event marks a significant step in the Navy's plan to field a single force-level integrated combat system to all surface ships, enabling faster, over-the-air delivery and proliferation of capability.

The integration of the AN/SPY-6(V)1 Air and Missile Defense Radar (AMDR) into Aegis BL10 provides significant performance over BL9 and the AN/SPY-1 radar. This upgrade expands sensor coverage, bolstering the Navy's ability to counter increasingly sophisticated and numerous threats in the Integrated Air and Missile Defense (IAMD) mission. Building upon the design and testing maturity of the AN/SPY-6(V)1, the Navy is poised to deploy the AN/SPY-6(V)2 and AN/SPY-6(V)3 across various naval platforms including CVNs, LPDs, LHAs, and FFGs. Additionally, existing DDG Flight IIA destroyers are slated for retrofit with SPY-6(V)4, ensuring common training and sustainment benefits across the Fleet.

The Navy maintains the undersea warfare edge by constantly evolving our undersea combat systems, continuing the highly successful Submarine Warfare Federated Tactical Systems (SWFTS) modernization process for hardware Technology Insertions and Advanced Processing Build software upgrades. Leveraging commercial off-the-shelf technologies, the SWFTS modernization process enables advanced capability improvements at lower cost, delivering a decades-long progression in warfighting capabilities including advancements in the combat, sonar, electronic warfare, and imaging systems. SWFTS Technical Insertion upgrades continue to deliver more cyber resilient system architectures, more capable payload integration, and increased lethality. Additionally, the next wave of upgrades will provide a larger Common Computing Environment (CCE) footprint, paving the way for faster and more efficient modernization of the Navy's submarine combat systems.

Furthering investments initiated in prior years, the FY 2025 budget supports continued adoption of Agile and DevSecOps software development best practices at SWFTS vendors to increase quality, expedite capability delivery, and improve cybersecurity by engraining cyber resiliency into the system architecture. Modernizing processes as well as capabilities will elevate the Fleet's ability to rapidly adapt to evolving threats and strategic priorities.

## **TACTICAL AVIATION**

### **Carrier Air Wing (CVW)**

The striking power of the CVW remains the cornerstone of power projection capability from 11 of the world's most survivable airfields, our aircraft carriers (CVNs). The modernization of the air wing and its weapons keeps the aircraft carrier relevant through the ship's 50 year service life. Today's air wing is transitioning to a mixture of 4th and 5th Generation strike fighter aircraft that continue to incorporate advanced capabilities to support the objectives of the NDS. The F-35C is replacing the early lot F/A-18E/Fs. E-2Ds, with an advanced airborne radar, networking, and aerial refueling capability are replacing the legacy E-2C. The CMV-22B is replacing legacy C-2As in support of strike group logistics, and Next Generation Jammer (NGJ) pods will augment and eventually replace the legacy ALQ-99 pods on the EA-18G and provide full spectrum integrated non-kinetic effects.

The Air Wing of the Future (AWOTF) refers to the evolution and composition of the CVW as it on-ramps advanced capabilities and capacity, measured at key milestones in the near, mid, and long term. The CVW will adapt and transform from an all "manned" to a teamed "manned-unmanned" force structure over the next two decades.

In the near-term, the AWOTF achieves a mix of F-35C Lightning II, F/A-18E/F Block III Super Hornet strike fighters, and EA-18G Growlers, and introduces the MQ-25 Stingray unmanned air vehicle (UAV). The MQ-25 will take over the air wing's organic aerial refueling mission, extending strike range and persistence, enhancing maneuverability, and enabling all strike fighters to focus directly on delivering effects in the high-end fight. In the mid and long term, the AWOTF will deliver game-changing lethality and survivability through the Next Generation Air Dominance Fighter (F/A-XX), further development and capability integration of unmanned systems, and continued development of jointly integrated multi-domain kill-chains.

The 2024 NDAA granted the Navy relief from the Title 10 requirement to stand up a 10th CVW by October 1, 2025 pending SECNAV submission of a report to congress analyzing potential

approaches to the manning, operation, and deployment of a 10th CVW. That report is on schedule to be submitted by the end of the current fiscal year. The current CVN maintenance schedule efficiently pairs nine CVWs to nine operational CVNs according to ship availability; 11 total CVNs with two under planned service-life maintenance. With an 11 CVN force structure, nine CVW are the optimal number of air wings for readiness, capability, and force generation.

### **Marine Expeditionary Unit (MEU) Aviation Combat Element (ACE)**

The Marine Expeditionary Unit (MEU) is the embodiment of the Marine Air-Ground Task Force (MAGTF), providing the nation with a critical strategic capability for naval campaigning, crisis response, and contingency operations. Deployed on a 3-ship Amphibious Ready Group (ARG), Marines and Sailors leverage the maritime domain as maneuver space to posture without the constraints and restraints of access, basing, and overflight. The self-sustained and flexible ARG/MEU can swiftly transition from steady-state competition and campaigning to crisis response or high-end warfighting without external augmentation, playing a vital role in integrated deterrence, global campaigning, and reinforcing American resolve.

As a lethal, forward-deployed, sea-based expeditionary force, the ARG/MEU operates across a spectrum of military operations with a tailorable and uniquely suited complement of aircraft. The MEU's Aviation Combat Element (ACE) inventory includes the F-35B, MV-22B, H-1, and CH-53E/K. The F-35B, the sole 5th Generation platform designed for amphibious warfare ships and expeditionary landing fields, stands as a cornerstone of Marine Corps' modernization efforts, integral to the Stand-in Force concept, and a crucial enabler for the Joint Force. Offering strategic agility, enhanced situational awareness, and increased maneuverability in contested environments, the F-35B provides commanders with a decisive advantage.

The MV-22B tiltrotor aircraft remains the most capable assault support platform in the joint inventory, revolutionizing assault support with its superior speed, range, and survivability. The H-1s, with their versatility, remain pivotal for the MEU's crisis response force and have played an indispensable role in safeguarding our capital ships. Finally, the new CH-53K, the only fully marinized heavy-lift rotorcraft, serves as a critical asset for mobility and logistical support in distributed operations within contested environments.

The ARG/MEU team represents one of the nation's most capable crisis response tools, persistently forward deployed and ready to provide Combatant Commanders with options across the spectrum of military operations. With its complement of capable aviation platforms, the MEU ACE

ensures seamless projection of power from the sea, air, and land, bolstering the ARG/MEU's organic operational mobility.

### **AIRBORNE ELECTRONIC ATTACK (AEA)**

The EA-18G Growler is a critical enabler for the Joint force, bringing fully netted electronic warfare capabilities to the fight and providing essential capabilities in the Electromagnetic Maneuver Warfare environment. The FY 2025 budget retains and fully funds the EA-18G aircraft and squadrons across the FYDP. Next Generation Jammer (NGJ) pods will augment and eventually replace the legacy ALQ-99 pods on the EA-18G to provide full spectrum integrated non-kinetic effects. The delivery of NGJ Mid-Band (MB) increases EA-18G Growler's lethality today providing a multi-generational leap in capability against adversary radars and communication targets utilizing advanced AEA techniques, as well as improved reliability and maintainability over legacy ALQ systems. NGJ is phased by threat, with initial focus on MB spectrum capability, followed in the future by Low-Band (LB) capability. NGJ High Band remains unfunded.

NGJ-MB is a cooperative development and production program with Australia, with Full Rate Production Decision expected in 3QFY2024. Three LRIP I shipsets were delivered in FY23. The first LRIP II shipset were delivered in 2QFY2024 with the remaining four LRIP II shipsets planned for delivery in FY24. Upon conclusion of operational test, IOC and initial deployment will occur in FY 2024. The FY 2025 budget includes \$86.7 million in RDT&E funding to continue development of the NGJ-MB Extended (MBX) Engineering Change Proposal (ECP) to extend the upper frequency range coverage limit of the system to counter modern and adaptive threats. The FY 2025 budget request also includes \$453.2 million in APN-5 funding for 10 Lot 5 shipsets, associated support equipment, training equipment and production support.

NGJ-LB is also a cooperative development program with Australia and is a critical AEA capability to augment and replace the legacy ALQ-99 Tactical Jamming System on the EA-18G in the low frequency bands where modern adversary radars have proliferated posing significant threats to joint forces. The FY 2025 budget request \$209.6 million RDT&E for NGJ-LB to focus on pod design, advanced capabilities development, and the build of aeromechanical and mission systems test pods to support ground and flight testing.

Growler Block 2 (GB2) will deliver capabilities to the warfighter to detect, locate, identify and counter advanced Integrated Air Defense Systems and complex emitters. GB2 will utilize a phased approach for spiral development of AEA capabilities to modernize processing, sensors, and aircrew

decision aids to maintain dominance in the modern electromagnetic spectrum. Phase 1 will include an upgraded Next Generation Electronic Attack Unit with open mission systems architecture, multi-level security, and incorporation of the reactive electronic attack measures capability. Phase 2 is the addition of the advanced multi-function array into the inboard leading edge flaps of the aircraft, augmenting the ALQ-218 functionality and capability. GB2 serves as a critical technology development and risk reduction effort to support Naval AWOTF.

The Marine Corps, through the INTREPID TIGER II program, is bringing advanced Electronic Warfare (EW) to all its aviation platforms and is focused on MUM-T to answer the MAGTF's requirements for AEA. The Marine Corps has worked in conjunction with OSD to purchase the first two XQ-58 Valkyrie CCA platforms to test EW effects in partnership with F-35 and our assault support platforms.

### **AIRBORNE COMMAND AND CONTROL AIRCRAFT**

The E-2D Advanced Hawkeye is the Navy's carrier-based airborne command and control aircraft, equipped with an advanced airborne radar, aerial refueling capability, and network connectivity required by naval and Joint Force commanders to provide command and control air and sea superiority, and to counter adversary anti-access and area denial strategies. The E-2D provides unique Theater Air and Missile Defense capabilities, and is a cornerstone of the Naval Integrated Fire Control (NIFC) system of systems linking Navy and Marine Corps fighter aircraft, Navy surface combatants, and Marine Corps ground units.

As of March 2024, the Navy has taken delivery of 60 E-2D aircraft with an additional 20 in production or on contract. Modernization priorities focus on Fleet capabilities to outpace the threat, including interoperability, communication and navigation hardware; essential Command and Control; networking and sensor performance capabilities that are critical enablers to Naval Integrated Fire Control; and vital upgrades and improvements to enable Joint All-Domain Command & Control (JADC2).

### **ASSAULT SUPPORT AND INTRA-THEATER LOGISTICS SUPPORT AIRCRAFT**

#### **Tiltrotor Aircraft (Marine Corps Osprey and Navy CMV-22B)**

The V-22 tiltrotor capability remains in high demand from Combatant Commanders for the essential transportation of personnel and equipment in support of worldwide operations. Navy CMV-22B, in coordination with Navy Unique Fleet Essential Airlift (NUFEA), provide the last leg

of Navy Intra-theater Airlift (NITA) for time-critical cargo and personnel from distributed logistics sites essential to extending the range of CSGs, SAGS, and ESGs during DMO. The V-22 program is focused on remaining ready, reliable, and relevant in support of naval operations, with the safety of aircrew and personnel as the number one priority.

In 2025, the program continues progress towards improvements in safety and reliability through enhancements to the design and monitoring of critical components, including the V-22 drive system. The Osprey Drive System Safety and Health Instrumentation (ODSSHI) system provides continuous monitoring of the components of the drive system to identify issues prior to in-flight experiences. The tragic mishap of an Air Force CV-22 off the coast of Japan reinforced the need for this type of system on the V-22, which is critical to the continued safe operation of Navy and Marine Corps V-22s.

The Navy CMV-22 program declared IOC in December 2021, and completed its third deployment in 2023, in support of the USS Carl Vinson CSG. The FY 2025 budget requests \$109.4 million in RDT&E for continued development of the Input Quill Assembly re-design, Digital Helmet Mounted Display for operations in Degraded Visual Environment, as well as other product improvements to maintain tactical relevance in support of modernization.

The FY 2025 budget also includes \$295.2 million in APN for modifications to maintain commonality, implement safety and reliability improvements, improve capability, and support production line shutdown and engineering support through delivery of the final Lot 28/FY 2024 aircraft. The FY 2023 congressional add procured four CMV-22 funding the Navy for the full program of record quantity of 48 and one MV-22 funding the Marine Corps for the fully program of record quantity of 360. The FY2024 congressional add will procure five additional CMV-22 for the Navy. Production Line Shutdown for MV-22 and CMV-22 begins in FY 2024.

### **Heavy Lift (Marine Corps CH-53K)**

The CH-53K replaces the legacy CH-53E as a faster, more efficient heavy lift helicopter with greater payload capacity than any current or emerging rotorcraft. Last year, the Marine Corps took delivery of 5 CH-53K and eclipsed 6,500 total program flight hours as the service continued the transition from the legacy platform to the CH-53K. In October 2023, Marine Heavy Helicopter Squadron 461 demonstrated the unique performance of the CH-53K when it recovered a crashed MH-60S at an altitude of ~10,000 ft in terrain unreachable by vehicles. This is the only aircraft capable of such a feat. In FY 2024, the program continues execution of Follow-On Test and

Evaluation activities focusing on secondary missions testing, updated aircraft survivability equipment testing, interoperability testing, and correction of deficiencies. All System Development and Demonstration flight testing completed in 2023 with ground testing planned to complete this year.

Last year the CH-53K program awarded Lot 7, the first Full Rate Production lot and the first year of two-year block buy contracts for aircraft and engines with plans to award Lot 8 in FY 2024. The DON is requesting FY 2025 Congressional authorization for another two-year block buy contract for airframes and a five-year multi-year contract for engines. These opportunities leverage aircraft volume quantity to realize significant cost savings, encourage improved production efficiencies, and provide much needed stability to the rotorcraft industrial base. The FY 2025 President's Budget requests \$86.1 million in RDT&E to continue the CH-53K development, test, and standup of organic test capabilities for follow-on improvements and \$2.642 billion in APN for procurement of 19 Full Rate Production aircraft, initial spares, and modifications.

### **EXECUTIVE SUPPORT AIRCRAFT**

The VH-92A Presidential Helicopter provides worldwide safe, reliable, and secure executive transportation with survivability, maintainability, and reliability improvements over the legacy VH-3D and VH-60N. Production of VH-92A completes in FY 2024 while the program continues to focus on improvements to support all mission types. The FY 2025 President's Budget requests \$51.4 million in RDT&E for VH-92A Helicopter Improvements which supports product improvements related to mission systems, maintainability, reliability, and obsolescence issues. These efforts include Mission Communications System hardware and software upgrades, Wideband Beyond Line-of-Sight capability enhancement, distributed network communications, cockpit upgrades, extended range cabin noise reduction, power margin, high-hot aircraft performance enhancements, and improved rotor blades. APN in the amount of \$69 million is required for mission computer software efforts including modifications to the VH-92A Mission Communications System.

### **FIXED-WING AIRCRAFT**

#### **TAKE CHARGE AND MOVE OUT (TACAMO)**

The Navy's TACAMO mission is to deliver and provide survivable, reliable, and endurable airborne nuclear command, control, and communications (NC3) capabilities to the President, Secretary of Defense, and the United States Strategic Command. The TACAMO mission is currently flown on the aging E-6B Mercury, a Boeing 707 airframe. The platform is undergoing simultaneous sustainment and modernization efforts, but TACAMO requires a new platform to ensure continued success of the mission in the future. The TACAMO recapitalization (E-XX) program will utilize the C-130J-30 (stretched Super Hercules) aircraft as the air vehicle replacement with a combination of existing and modernized NC3 mission systems developed and integrated onto the platform by a third-party contractor.

In FY 2025, the Navy will invest \$775.3 million in RDT&E toward platform development. This includes \$659.9 million for the TACAMO Weapon System (TWS) Engineering and Manufacturing Development (EMD) contract, \$15.2 million for non-recurring engineering contracts on the C-130J airframe, and \$15.2 million for very low frequency (VLF) transmit system development and modernization. The TWS EMD contract has a planned award in first quarter FY 2025 and will provide for the modification and integration of NC3 systems onto the C-130J-30 for the TACAMO mission. FY 2025 sets the stage for successful TACAMO mission integration on the C-130J-30 supporting U.S. nuclear deterrence and Columbia's assured second strike for decades to come.

### **MARITIME PATROL AIRCRAFT**

The P-8A is the DoD's only long-range full-spectrum Anti-Submarine Warfare (ASW), cue-to-kill platform, with substantial armed Anti-Surface Warfare (ASuW) and networked Intelligence, Surveillance, and Reconnaissance (ISR) capabilities. The P-8A program continues to incrementally field warfighting capabilities via Engineering Change Proposals. Increment 3 Block 2 (Inc 3 Blk 2) is on track to initially field in FY 2026 and delivers the final planned spiral upgrade to the platform to fulfill the validated baseline requirement for full ASW, ASuW and ISR warfighting capability at the Higher-than-SECRET (HTS) level. Inc 3 Blk 2 provides the full war-fighting capability required for Major Combat Operations (MCO) incorporating HTS processing, Integrated Broadcast System (IBS), ASW-Signals Intelligence (SIGINT), Multi-static Active Coherent-Enhanced (MAC-E), enhanced track management and sensor fusion (Minotaur) and Wide Band Line of Sight (WBLOS) SATCOM capability.

The FY 2025 budget request includes \$173.5 million in RDT&E for final integration, completion of DT and commencement of OT testing for Inc 3 Blk 2 and additional rapid capability development efforts, such as LRASM testing, to pace emergent threats. \$319.6 million in APN is requested to fund additional ECP-6/7 kits for fleet instructor training and squadron transition safety upgrades, and the initiation of Boeing's P-8A production line shutdown activities. Boeing intends to initiate P-8A production line shutdown activities in FY 2025 (for final line shutdown in FY 2027) if no additional P-8A orders are received.

### **UNMANNED AIRCRAFT SYSTEMS (UAS)**

Naval Aviation continues to integrate unmanned systems into the fleet to enable a fundamental shift in the way the DON conducts multi-domain integrated naval operations. Broadening unmanned aviation efforts will decrease risk to personnel, allow greater persistence, longer ranges, improved data speed and accuracy, and a faster decision cycle. These capabilities offer the DON increased asymmetric operational opportunities and tactical advantages that provide the warfighters an edge to dominate and win in ongoing and future conflicts. The FY 2025 budget prioritizes the continued development and production of Unmanned Aircraft Systems (UAS) to support current fleet ISR requirements and future UAS integration into the CVW, ARG, and MEU.

#### **MQ-25A Unmanned Carrier Aviation**

MQ-25A will increase the strike range, persistence, capability, and lethality of the CVW through organic mission and recovery tanking, and provide an ISR capability to the CSG. As the primary CVW mission and recovery tanker, MQ-25A will increase available CVW strike fighter assets and preserve F/A-18E/F service life. MQ-25 is integral to the AWOTF and establishes the foundation for MUM-T and autonomous operations from the CVN. The FY 2025 budget continues investment in MQ-25 and the Unmanned Carrier Aviation Mission Control System (UMCS) development, begins testing of Navy MQ-25A, and procures three MQ-25A air vehicles to increase fleet inventory. MQ-25A will IOC in late 2026. The FY 2025 budget request supports procurement for the MQ-25 Stingray with \$552.3 million in APN and continues RDTE funding with \$214.94 million.

#### **MQ-4C Triton**

The MQ-4C Triton is a persistent force multiplier that delivers situational awareness of the battle space to shorten the sensor-to-shooter decision loop in the maritime domain. MQ-4C Triton's

persistence and sensor mix is integral to Navy's Maritime Strategy to build and maintain a more lethal and effective global Joint Force Common Operational Picture.

The program is in the process of standing up its second and third operational orbits in the USEUCOM and USCENTCOM AORs (FY24/25), after successfully standing up its first orbit in INDOPACOM in FY23. The multi-intelligence (Multi-INT) variant of Triton is currently executing in the western Pacific, providing Combatant and Fleet commanders with timely and actionable intelligence products.

The FY 2025 budget requests \$281.2 million in APN to continue procurement of associated support elements and retrofit baseline units to Multi-INT configuration, and \$14.4 million in baseline RDTE for correction of deficiencies. An additional \$428.4 RDTE is requested for advanced MQ-4C safety systems and sensor modernization efforts as part of Increment 2 capability development efforts.

#### **MQ-9A Extended Range (ER)**

The Marine Corps MQ-9A ER is a critical enabler for the Naval and Joint Force providing an extended range, long-endurance multi-mission ISR capability through a suite of sensors designed to detect surface and air threats. The MQ-9A ER is a linchpin in providing Maritime Domain Awareness (MDA), as well as providing resilient and persistent information flow, enabling command and control of EABO and DMO forces against near or peer threats.

The Indo-Pacific has unique challenges requiring the Stand-in Force to be able to operate over significant distances between ground units. An MQ-9A ER overhead equipped with an Airborne Network Extension (ANE) payload facilitates connectivity for Stand-in Forces operating at the forward edge of the battlespace. MQ-9A ER will also provide an Electronic Warfare and Airborne Early Warning capability to enhance the situational awareness of decision-makers, and provide input to the joint common operational picture.

With the addition of a Smart Sensor autonomous capability, the MQ-9A ER will be enhanced through automatic cueing and fusing of tracks to other onboard sensors. The Marine Corps is set to have 20x MQ-9A Block 5 air vehicles, 16 x Ground Control Stations (GCS), and payloads to conduct assigned missions. Existing U.S. Air Force and Air National Guard efforts are being leveraged to reduce cost as the Marine Corps matures this nascent Service-level capability, reducing risk.

### **WEAPONS PROGRAMS**

## **Munitions Inventory and Industrial Base**

The President's FY 2025 budget requests \$6.6 billion for the Weapons Procurement account. Signifying a commitment to modernize our arsenal with crucial capabilities to bolster readiness. Additionally, a substantial portion of this funding is allocated to expanding production capacity, aimed at increasing critical munitions inventories.

Continued U.S. assistance to Ukraine, Israel, and operations in the Red Sea during Operation Prosperity Guardian underscores the imperative for investments across the industrial base to bolster readiness for the U.S., its allies, and partner nations. The DON collaborated closely with industry partners to accelerate the replenishment of stocks, identifying barriers to production and strategizing on targeted investments to enhance inventory, capability, and capacity. Investment continues to be directed toward expanding and expediting production throughput, optimizing testing processes, and fortifying critical component supply chains. Concurrently, the Department intensifies its focus on recertification as a cost-efficient method to maintain and enhance short-term inventory levels. Together with these ongoing replenishment efforts, these investments signal a steadfast and stable demand signal to prioritizing munitions inventories.

Leveraging authorities extended in the FY2024 National Defense Authorization Act, the Department pursues MYP contracts for vital munitions programs such as Standard Missile-6 (SM-6) and Naval Strike Missile (NSM). MYP contracts for Advanced Medium-Range Air-to-Air Missile (AMRAAM) and LRASM will be joint efforts with the USAF. This strategy harnesses savings generated through Economic Order Quantity (EOQ) financing to procure additional missile lots, thereby enhancing efficiencies and yield.

## **Missile Programs**

As the Navy carefully manages the approach to end of life of Ohio Class SSBNs, addressing the viability of the Strategic Weapons System (SWS) throughout the life of the Columbia Class SSBNs remains a priority. The current TRIDENT D5 Life Extension (D5LE) remains an effective and credible Strategic Weapon System on both the Ohio Class and Columbia Class SSBNs into the 2040s, supporting the Ohio Class submarine through end of service life and serving as the initial Strategic Weapon System for the Columbia Class SSBNs. Modernization of the SWS, D5LE2, is required to maintain the Sea Based Strategic Deterrent starting with the ninth Columbia Class submarine by ensuring sufficient missile inventory and seamlessly supporting USSTRATCOM

requirements. D5LE2 incorporates the necessary flexibility and adaptability needed to maintain demonstrated performance and survivability in the dynamic threat environment until Columbia Class end of life. The Administration's Nuclear Posture Review (NPR) states that D5LE2 needs to begin deploying on Columbia Class in the late 2030s to sustain sufficient missile inventories to support the U.S. sea-based strategic deterrent as well as the United Kingdom's independent nuclear deterrent. The Navy will prioritize near-term investments in accordance with the NPR to ensure that D5LE2 is effective in the expected threat environment and delivers on time.

### **Tomahawk**

The Navy is continuing investment into Tomahawk Block V new production, Maritime Strike Tomahawk, and recertification/modernization of Tomahawk Block IV. Ally and partner interest in Tomahawk capability emphasized missile production throughput challenges. The FY 2025 budget request continues to fund factory improvements to increase industrial capacity, increasing throughput to 600 missiles per year by FY27.

In the FY 2025 budget request, the Department sustains the Tomahawk as the nation's premier all-weather, long-range, survivable deep strike offensive weapon to include new production of and recertification of current inventory into modernized BLK V Tomahawk missiles. BLK V(a) Maritime Strike Tomahawk (MST) provides a long-range moving maritime strike capability to meet current and future threats, supporting the Surface Warfare Mission area through the inclusion of a seeker suite in the Tomahawk BLK V missile. The FY 2025 budget request for MST provides continuation of Operational and Integration Testing and ultimately fields hardware, software, and munitions for the MST capability in 2025. The FY 2025 budget request continues engineering, manufacturing, and development of the Joint Multiple-Effects Warhead System (JMEWS), which will deliver a hardened target penetration capability with the Tomahawk BLK V(b) missile in FY 2027. The FY 2025 budget request continues engineering, manufacturing, and development of the Military Code Global Positioning System (GPS) receiver, which will deliver significant increased resiliency in spoofing and jamming threat environments capability to the Tomahawk BLK V missile in 2026.

### **Offensive Anti-Surface Warfare (OASuW) Increment 1/ Long Range Anti-Ship Missile (LRASM), LRASM C-1/C-3, and OASuW Increment 2 / HALO**

The LRASM C-1 and C-3 variants add near-term, cost-effective capacity to the DON's long range strike capability while enhancing the OASuW mission. The FY 2025 President's Budget

requests \$102.5 million in procurement funding to buy 30 DON LRASM C-1 weapon systems with associated support to provide economic order quantity funding in support of the MYP initiated in FY24, and to provide the assets for operational test of the C-1 configuration. The FY 2025 President's Budget request also includes \$163.3 million in RDT&E funding for the continuing development of the LRASM C-3 capability improvement. Navy AGM-158 development efforts involve integration of a Beyond Line-of-Sight radio subsystem to enable enhanced operational flexibility.

The FY 2025 President's Budget continues developing the AGM-158 C-3 variant through software development and test, platform integration, and entry into integrated test. The FY 2025 President's Budget request also includes \$223.9 million for procurement of 60 LRASM in the C-3 configuration migrating the primary production line to the more-capable C-3 configuration as the program reaches sufficient maturity.

The FY 2025 President's Budget includes \$178.6 million for development of OASuW Increment 2, which is now referred as Hypersonic Air Launched OASuW (HALO). HALO supports the national imperative to mature hypersonic capabilities and transition them into warfighting systems, increasing the lethality and deterrent effect of our Carrier Wings. The program represents a longer-term capability that encompasses increased performance and will provide the Navy with the necessary air-launched, carrier-based weapon to address evolving long-range, -threats from near peer competitors. HALO will complete Milestone B and enter formal Engineering and Manufacturing Development, to include a competitive contract award during FY 2025.

### **Advanced Anti-Radiation Guided Missile (AARGM) & AARGM Extended-Range (AARGM-ER)**

AARGM domestic procurement completed in FY 2021 with the award of the last Navy Full Rate Production (FRP) contract. There have been 1450 AARGMs (All Up Rounds, Training Missiles, and Spares) delivered to the Fleet as of March 2024. Program of record delivery is 1803 missiles. Deliveries continue through FY 2025 in support of the transition to AARGM-ER. AARGM-ER provides the DON with a 5th generation compatible extended range asset to project power and provide Suppression of Enemy Air Defenses, both at-sea and on land. The first AARGM-ER delivery is scheduled for 3QFY24. The FY 2025 President's Budget requests \$22.3 million in RDT&E to support operational and integration testing of production representative hardware. The budget requests \$248.6 million in Weapons Procurement, Navy (WPN) to procure 151 AARGM-ER all-up-rounds and six Captive Air Training Missiles and advance procurement.

## **Hypersonic Program**

The DON is developing a hypersonic weapon system that will enable precise and timely strike capability against deep inland targets in contested environments. In collaboration with the Army, the Department is leveraging a common missile design and joint test opportunities to field a conventional hypersonic weapon system. Zumwalt Class DDGs will be the first Navy platform to field this hypersonic capability in the mid-2020's, followed by Block V Virginia Class SSNs. In March 2020, the Services executed a successful flight test of the Common Hypersonic Glide Body, and in 2022, the Services followed up that testing with several static-fire tests and a flight test of the newly-developed two stage Solid Rocket Motor. The DON has validated the design of the Navy's cold-gas launch approach and is continuing subscale and component testing in support of future capability development, manufacturability, and affordability improvements. This rapid development and demonstration of hypersonic strike weapon systems supports the U.S. ability to deter, and if necessary, defeat potential adversaries.

The Department's FY 2025 budget request will support critical milestones on the path to fielding CPS to the first Zumwalt Class DDG. The request totals \$903.9 million in CPS R&D funding.

The Marine Corps is working towards the capability to employ smaller, highly mobile hypersonic weapons through science and technology initiatives. The Marine Corps is pursuing an acquisition strategy that leverages the developmental work of other Services and agencies, investing when the capability has reached a higher technology readiness level that allows for expedited prototype experimentation at reduced costs.

## **Torpedoes**

As the primary weapon in maintaining an advantage in the undersea domain, Heavyweight and Lightweight Torpedoes remain a critical component of the Department's munitions inventory. Continued investments in torpedo capacity and capability are vital to outpace our strategic competitors. The MK 48 Heavyweight Torpedo remains the Navy's primary submarine-launched ASW and ASuW weapon, while the MK 54 Lightweight Torpedo provides additional undersea dominance from the surface and air domains. The Navy continues to modernize and upgrade existing inventory to incorporate the latest capability advancements, the Navy has also restarted

production of the MK 48, ramping up production through FY23 after accepting delivery of the first new production heavyweight torpedoes in over twenty years during the summer of 2022.

Furthermore, the MK 48 MOD 8 and MK 48 MOD 9 will bring new capabilities and technologies to ensure our advantage is maintained will into in the future. The Department also continues to deliver and upgrade MK 54 Lightweight Torpedoes to surface ships and air platforms to maintain our edge over the ASW threat. Producing the upgraded MK 54 MOD 1 for the U.S. Navy as well as MK 54 MOD 0 torpedoes for our allied partners ensures the torpedo industrial base remains healthy.

The Department continues its partnership with industry and university affiliated research centers to develop next-generation torpedoes. These include the MK 54 MOD 2 Advanced Lightweight Torpedo designed to fight the high-end threat, and the Compact Rapid Attack Weapon, a Very Light Weight Torpedo with multi-mission capability providing both a hard-kill torpedo countermeasure and a short range ASW weapon. The Navy continues to procure the High Altitude ASW Weapon Capability (HAAWC) wing kit to employ MK 54 from high altitude via the P-8A, and we've made great progress in developing the Hammerhead encapsulated effector, continuously demonstrating the flexibility and effectiveness of MK 54 payloads for the US and our Allies.

### **MARINE CORPS GROUND PROGRAMS**

The Marine Corps has made significant progress in modernization initiatives and is a more lethal and appropriately postured naval expeditionary force-in-readiness. By operating inside actively contested maritime spaces, the Navy and Marine Corps team provides the Joint Force a naval expeditionary warfare strategic advantage capable of operating in times of campaigning, or conflict, anywhere around the world to ensure global maritime commons remain free and open. However, operating forward within an adversary's weapons engagement zone presents unique challenges that pose threats to our networks, formations, and sustainment capabilities. As a result, the Marine Corps' Fiscal Year (FY) 2025 modernization investments prioritize resilient command

and control systems, advanced air defense capabilities, and distributed logistics networks to enhance Joint Force lethality.

### **Command & Control and Sensing Capabilities**

Through the Stand-in Force (SIF) concept, Marines will be on the forward edge of a maritime defense-in depth. The Marine Corps has a unique requirement for rapidly deployable capabilities to sense and communicate across multiple domains to project Joint Force lethality inside an adversary's weapon engagement zone. Through this concept and approach, Marines will be strategically placed on key maritime terrain to operate with allied and partners during competition, and respond to crises, or conflict to deter adversary actions, and if necessary, fight and win conflicts in support of the Joint Force. Our stand-in forces will increase maritime domain awareness, provide quality intelligence for sound decision making, diversify redundancy in asset allocation, and increase targeting successes within the anti-access/area-denial environment.

The Ground/Air Task Oriented Radar (G/ATOR) is a multi-role, ground-based, expeditionary three-dimensional radar system that provides surveillance of airborne targets, detection of cruise missiles, Unmanned Aircraft Systems (UAS), rockets, artillery, and mortars. As a sensing asset, the G/ATOR exercises its cueing capability to the appropriate air defense platform. Furthermore, the G/ATOR increases maritime domain awareness for the Naval and Joint Force by providing persistent detection of aerial threats within an interoperable network via the Common Aviation Command and Control System (CAC2S). The Marine Corps has fielded or received funding for (54) G/ATOR systems with PB25 requesting \$71.9 million to fund radar upgrades. Complementing these systems is the Medium-Range Air Defense Radar (MRADR), which will provide a persistent, high-quality, 360-degree field of view air picture with no detectable electromagnetic footprint. Although it is in development, the Marine Corps invested \$9 million for the first four prototype systems in FY24 and anticipates investing \$16 million in FY25.

The Common Aviation Command and Control System (CAC2S) enables a collaborative network of Marine Corps and Joint sensor inputs to facilitate detection and targeting decisions. The Marine Corps continues to invest in CAC2S as the command-and-control interface for air surveillance radars and Naval Cooperative Engagement Capability. Additionally, this capability, and future enhancements, enable the Marine Corps to share air surveillance tracks and radar measurement information with Joint partners in support of integrated air and missile defense, integrated fire control, and battle management effects. The 3d Marine Littoral Regiment (MLR) received one CAC2S Small Form Factor (SFF) Data Module System (DMS) in FY23. The DMS is a SFF prototype that provides interim capability prior to SFF full-rate production in FY25. The SFF system will achieve initial operational capability in FY25 with five systems fielded and expect to achieve full operational capability in FY29 with (42) systems. The PB25 request of \$103.1 million supports these efforts to field CAC2S capabilities.

The Family of Integrated Targeting Cells (FITC) is a naval combat system that leverages data from national sources, processed and fused at the forward edge with additional tactical sensors to enable stand-in forces to support Joint Long-Range Fires (LRF) and all domain intelligence support to targeting against dynamic threats. The Marine Corps continues to invest in the FITC and the tactical-national interfaces that can support over-the-horizon awareness, identification, and targeting in contested environments. FITC is deployed at echelon for employment across multiple formations. Prototypes include the Maritime Targeting Cell – Expeditionary (MTC-X), the MTC-Mobile (MTC-M), and the Tactical Edge Node – Expeditionary (TEN-X) designed for highly mobile and dispersed units. Prototypes will demonstrate resilient networking and processing capabilities that integrate with national, commercial, and in-theater tactical feeds to increase capabilities operating at the tactical edge. Collectively, FITC uses a variety of sensors in numerous domains to create a comprehensive operational picture to drive real time decision making on behalf

of the stand-in force. The PB25 request of \$104 million supports the Marine Corps efforts to field the FITC capabilities.

### **Air Defense**

As the threat environment continues to be defined by increasing technological advancements, the Marine Air Defense Integrated System (MADIS) and Medium Range Intercept Capability (MRIC) provide complementary warfighting advantage to our naval expeditionary stand-in forces operating inside an adversary's weapons engagement zone.

The MADIS provides an upgradeable expeditionary capability that utilizes organic sensors for detecting and targeting aerial threats to increase force protection for ground forces, installations, and critical assets. Employed with a pair of Joint Light Tactical Vehicles (JLTV), the MADIS can defend against fixed and rotary wing aircraft, group 1-5 Unmanned Aircraft Systems (UAS) threats, with non-lethal electromagnetic attack and lethal fires. The approved acquisition objective is (190) MADIS systems comprised of (380) total vehicles with a \$132.2 million request to support the procurement of (13) systems in PB25. Initial operational capability is the first quarter of FY25 with the delivery of (13) systems to III Marine Expeditionary Force.

The Light-MADIS (L-MADIS) is an MV-22/CH-53 internally transportable pair of Ultra-Light Tactical Vehicles (ULTV) capable of defeating fixed and rotary wing aircraft and group 1-5 Unmanned Aircraft Systems (UAS), within the L-MADIS engagement zone, via electromagnetic attack and man portable air defense systems. L-MADIS' small size and lightweight design is tailor-built for air and amphibious assault, providing forwards postured forces organic sensors, and aviation command and control functions in a littoral environment. The approved acquisition objective is (21) systems consisting of (42) ULTVs with a \$33.2 million request to support procurement of (5) systems in PB25. Initial operational capability scheduled for the second quarter of FY25 with the delivery of three systems to III Marine Expeditionary Force.

Complementing the Marine Corps air defense capabilities, the MRIC defends forward-deployed forces and installations against threat cruise missiles, fixed and rotary wing aircraft, groups 3-5 UAS, and other aerial threats. This is accomplished through the integration of fielded Marine Corps systems including the CAC2S, the TPS-80 G/ATOR, the Iron Dome Battle Management Control console, and the SkyHunter missile and guidance uplink. In February 2024, industry partners broke ground establishing a U.S. based production facility in Camden, AR which will ensure continued access to a supply of domestic produced interceptor missiles. The Marine Corps currently plans to field a firing battery to each Marine Expeditionary Force (MEF) that can distribute four independently deployable firing platoons.

The Marine Corps is utilizing a Middle Tier Acquisition (MTA) rapid prototyping approach to procure and certify an MRIC prototype platoon that provides an initial capability by the end of FY25. The first complete battery will be fielded by FY26 followed by an additional battery in FY27 and FY28. In total, the Marine Corps seeks to field three firing batteries with several hundred missiles for each battery. The FY25 request of \$111 million supports the procurement of (12) launchers and (242) missiles to begin fielding the MRIC capabilities to forward deployed Marine formations.

### **Marine Corps Global Positioning Network (MCGPN)**

Global sustainment operations are at risk of being contested from our home stations and bases to our forward postured forces. Therefore, the Marine Corps is actively wargaming, experimenting, and modernizing logistics capabilities to sustain Marines in these contested spaces. Sustainment modernization efforts include expanding the positioning of materiel, and diversifying distribution capabilities through the Marine Corps Global Positioning Network (MCGPN). The MCGPN is an integrated global network of materiel positioned afloat and ashore in key strategic locations that support operations and active campaigning by the Marine Corps.

The MCGPN includes the current afloat Maritime Prepositioning Force (MPF) and the Marine Corps Prepositioning Program in Norway (MCPN), as well as multiple ashore sites we are preparing to establish in the Indo-Pacific. The Service has programmed resources for the establishment of three sites in the Indo-Pacific as a priority effort across FY24 and FY25. In FY24, the Marine Corps received \$44 million for one ashore based MCGPN site, and in FY25, the Marine Corps is requesting an additional \$38.5 million for an additional two sites. Ashore sustainment sites strengthen our relationships with allies and partners by providing forward stocks for humanitarian assistance and disaster relief, as well as critical capability sets during potential conflict.

Additionally, the Marine Corps continues to expand its methods and nodes available to the installation and logistics enterprise for staging, delivering, and recovering mission critical assets and logistics services. We are investing and experimenting with emerging unmanned platforms for smaller form-factor logistics support from the air. Fielding has begun for the Tactical Resupply Unmanned Aerial System (TRUAS) as the smallest in a family of unmanned aerial logistics systems. The TRUAS has an authorized acquisition objective of (179) systems and achieved initial operating capability in the first quarter of FY24 with the fielding of the first systems to 3d Marine Littoral Regiment (MLR) in Hawaii. The PB25 request of \$16.1 million supports procurement of systems in pursuit of reaching full operating capability in FY28. For the medium variant, the Marine Corps is conducting rapid prototyping of the Medium Aerial Resupply Vehicle Expeditionary Logistics (MARV-EL) utilizing other transaction authority to develop two prototype systems. In FY24 the program will down select to one of these two prototypes and begin assessment of the medium capability to enable planned acquisition. The PB25 request includes \$17.2 million in research, development, testing, and evaluation (RDT&E) to further mature MARV-EL prototypes and develop a production representative system.

### **Campaign of Learning**

Through an iterative, threat informed, and concept-based approach, the Marine Corps utilizes a campaign of learning to inform its balanced approach focused on modernizing a force that stands-in during competition, is postured to respond to crisis, and organically move, fight, and win during conflict. To enhance our modernization efforts, the General Robert B. Neller Center for Wargaming and Analysis (Neller Center) will provide a comprehensive digital environment to conduct fully informed, data-enabled wargames that contribute to the Service's balanced approach to modernizing a force that campaigns during competition, is postured to respond during crisis, seizes and defends key maritime terrain during conflict.

The state-of-the art venue will enable wargaming within threat-informed future operating environments at multiple classification levels to support senior leader decision-making. The Neller Center's primary use will be facilitating concept development, capability development, and operational decisions and plans. The Neller Center is expected to achieve initial operating capability in FY26 and full operating capability in FY28. At full operating capability, the Neller Center will possess the capability to ingest authoritative data accessed through twenty-one U.S. and coalition networks; and to conduct distributed wargames employing a collaborative electronic wargaming environment networked to an array of partners. Critical to achieving the Neller Center's optimal employment are the wargaming software material solution, and the Information Technology (IT) and Audio-Visual (AV) infrastructure. The IT/AV infrastructure includes complex programs requiring cyber authorizations of many technologies at all classification levels involving multiple approvals. The software material solution will require sustained resources to ensure the wargaming technology is current with the changing threat environment. The PB25 request includes \$13.9 million in software and hardware to reach critical milestones in the Neller Center's development.

## **Conclusion**

Today's the Marine Corps is prepared to serve as a naval expeditionary force-in-readiness and operate inside actively contested maritime spaces in support of Joint campaigns. Continued experimentation and learning from real-world threats will undoubtedly uncover additional refinements to enhance our force, we are confident our collective efforts will result in a Marine Corps organized, trained, and equipped to meet the global challenges of the 21st century.