

NOT FOR PUBLICATION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES

STATEMENT OF

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BEFORE THE

SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES OF THE
HOUSE ARMED SERVICES COMMITTEE ON
DEPARTMENT OF THE NAVY SEAPOWER AND PROJECTION FORCES CAPABILITIES

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Chairman Wittman, Ranking Member Courtney and distinguished members of the subcommittee, thank you for the opportunity to appear before you today to address the Department of Navy's Seapower and Projection forces capabilities. First I would like to thank Congress for your support of the Bipartisan Budget Act of 2018. Enactment of this legislation will help provide the predictability and stability in funding that is critical to our success and will support building the Navy the Nation Needs, the maritime component of the National Defense Strategy.

The strategic environment continues to become more sophisticated, uncertain, and technologically charged. The proliferation of modern conventional and cyber weapons to a broader range of state and non-state entities, along with the erosion of our competitive advantage in areas where we have long enjoyed relative superiority, is likely to continue as rival states attempt to contest our influence. Competition for natural resources, violent extremism, natural disasters, social unrest, cyber-attacks, regional conflict, and the increase of advanced weaponry create a range of challenges for a globally responsive force.

As detailed in the 2018 National Security Strategy and the 2018 National Defense Strategy, in order to retain and expand our competitive advantage, it is imperative that we continuously adapt to the emerging security environment – and do so with a sense of urgency. This requires the right balance of readiness, capability, and capacity, as well as budget stability and predictability. Together, we can ensure our military's capability, capacity, and readiness can continue to deliver superior naval power around the world, both today and tomorrow.

As part of our enduring commitment to accelerating delivery of advanced capabilities to the warfighter, the Department continues its pursuits of accelerated acquisition and business process reforms. We are utilizing accelerated acquisition authorities Congress provided under the Fiscal Year (FY) 2017 National Defense Authorization Act including implementation of accelerated acquisition policies for Rapid Prototyping. We are actively promoting innovation, government/academia partnerships, and the transition of key manufacturing technologies and processes with investments focused on affordability and capabilities most beneficial to the warfighter.

As part of the Joint Force, the maritime dimension of the National Defense Strategy is to increase American naval power by building the Navy the Nation Needs (NNN). The *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for*

Fiscal Year 2019 is the roadmap to attain a 355-ship fleet, prioritizing three elements that the Navy will pursue to grow the force: (1) Steady, sustainable growth and an establishment of minimum baseline acquisition profiles that grow the force at a stable, affordable rate. This includes the sustainment of the industrial base at a level that supports affordable acquisition, predictable and efficient maintenance and modernization, and an appropriately sized workforce for more aggressive growth if additional resources become available. (2) Aggressive growth that more rapidly attains the same warfighting requirements as increased resources and industrial capacity permit. (3) Service Life Extensions (SLEs) that evaluate the potential additional service life that can be gained through restoration and modernization based on capability improvement costs versus unit replacement criteria. By balancing long-term growth profiles with targeted SLEs and aggressive growth options, the Navy will be able to stabilize the industrial base and set the foundation for growing the force towards its warfighting requirement.

Similarly, to increase its competitive advantage over pacing threats, the Marine Corps will rapidly adapt and modernize in an affordable way, which depends greatly on predictable funding. In anticipation of the changing threat, the Marine Corps began implementation of the Marine Operating Concept (MOC) in 2016, codifying the long-term vision for how the service will operate, fight, and win in the future. This concept identified the need for a more lethal, resilient force able to contribute to all domain access, sea control, power projection, maritime security and therefore deterrence in any threat environment. The MOC is directly in line with the recently published National Defense Strategy which highlights the requirement for increased strategic flexibility and freedom of action. The MOC and its implementation prepare the Marine Corps to operate as part of the Contact, Blunt, and Surge forces identified in the National Defense Strategy, specifically as part of the naval force. Marines operate regularly within these three layers today, making the modernization priorities highlighted in the FY 2019 President's Budget all the more critical.

The Fiscal Year 2019 President's Budget Request

The FY 2019 President's Budget was informed by the 2018 National Security Strategy and the 2018 National Defense Strategy and charts a course to building a larger, more capable battle force the nation needs.

The 2018 National Defense Authorization Act supports Navy's validated NNN

requirement for 355 Battle Force ships, which is based upon analysis and acceptable strategic and operational risk, to address the evolving and increasingly complex responsibilities. The FY 2019 President's Budget request builds towards this larger and more lethal force and reflects the continued commitment to produce a 355 ship Navy with the correct mix of ships; a commitment that increasingly values speed, lethality, stealth, information, and design margin for modernization as key attributes for future platforms – providing warfighting commanders capabilities in increasingly contested environments across all phases of warfare.

When compared to the FY 2018 President's Budget request, the FY 2019 President's Budget adds 11 more Battle Force ships over the Future Year Defense Program for a total of 54, with three additional ships in FY 2019. The FY 2019 request includes procurement of ten ships in FY 2019: two SSN 774 VIRGINIA Class attack submarines; three DDG 51 ARLEIGH BURKE Class destroyers; one Littoral Combat Ship (LCS); one Expeditionary Sea Base (ESB); two JOHN LEWIS Class fleet oilers (T-AO); and one Towing, Salvage and Rescue ship (T-ATS). The FY 2019 President's Budget provides for SLEs on 11 Battle Force ships including six Cruisers, four Mine Countermeasure ships, and one Improved Los Angeles Class SSN. The FY 2019 President's Budget request also includes funding for SLEs on 21 vessels in the Ready Reserve Force (RRF) and the Military Sealift Command surge fleet. The FY 2019 President's Budget request includes funding for procurement of two used commercial auxiliary vessels in FY 2021 and 2022, as authorized in the FY 2018 National Defense Authorization Act.

With sustained funding provided in a timely manner and the execution of qualifying SLEs, the FY 2019 President's Budget as described in the NNN shipbuilding plan puts the Navy on a path to 326 ships by FY 2023 and 355 ships by the early 2050s. The plan promotes a stable and efficient industrial base that encourages industry investment in capital improvements, capital expansion, and a properly sized world-class workforce. It is a realistic plan that reflects the imperative to remain balanced across investments in readiness and advanced capabilities in an era of unpredictable funding levels. By setting conditions for an enduring industrial base as a top priority, working together with Congress, the Navy is postured to aggressively respond to more investment in any year, which if received in all years, combined with SLEs and strong industry response, could attain the warfighting NNN target of 355 ships as early as the 2030s – balanced, credible and sustainable.

Summary

The ascendant threats posed by revisionist powers and rogue states require change – we must become more lethal, resilient and as a consequence, a more capable deterrent. The Navy-Marine Corps team is re-evaluating our contributions to all domain access, sea control, power projection, maritime security, and deterrence knowing that we must consider the tactical and operational details of a contingency – and how our contributions could shape the strategic environment to prevent conflict. Modern sensors and precision weapons with expanding ranges and lethality are redefining how we assess our posture and relative combat power.

The Department of the Navy continues to increase capacity, lethality, and availability with the shipbuilding, aviation, and expeditionary programs. New capabilities are continually being delivered to the fleet and retrofitted on existing platforms to provide enhanced lethality and survivability to the warfighter. In addition, the Department is aggressively pursuing efforts to accelerate acquisition timelines and schedules and further drive affordability into our programs, in order to deliver capability to our warfighters faster and be as effective as possible within our resources. Continued congressional support of the Department's plans and budgets will help sustain a viable industrial base, as will timely enactment of appropriations, avoiding costly Continuing Resolutions. This request lays the ground work for growing warfighting capabilities in the FY 2020 President's Budget, as the Department also makes initial investments in a larger Navy and Marine Corps.

We thank you for your continued support of the Navy and Marine Corps and request your support of the FY 2019 President's Budget.

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

U.S. NAVY AND MARINE CORPS SEAPOWER AND PROJECTION FORCES CAPABILITIES

Ships

Aircraft Carriers

The aircraft carrier is the centerpiece of the Navy's Carrier Strike Groups and central to Navy core missions of sea control, maritime security, and humanitarian assistance and disaster relief. NIMITZ and FORD Class carriers will be the premier forward-deployed asset of choice for crisis response and early decisive striking power in major combat operations for the next half-century. The Department has established a steady state FORD Class procurement plan designed to deliver each new ship in close alignment with the NIMITZ Class ship it replaces.

We continue to see progress in the testing of new systems aboard USS *Gerald R Ford* (CVN 78). As of this January, CVN 78 has completed six underway events and conducted over 700 catapult launches and arrestments with Navy jets, including over a hundred launches and recoveries in one day on two separate occasions. These fixed wing operations were successfully supported by a number of aviation systems, while others will require continued refinement as they continue to support ongoing shipboard testing. The *John F Kennedy* (CVN 79) is approximately 40 percent complete with launch planned in late 2019 and delivery in the fall of 2024. The Navy is pursuing contracting actions necessary to continue fabrication of *Enterprise* (CVN 80) in FY 2018 and preserve the delivery date to achieve significant cost reductions.

The NIMITZ Class Refueling Complex Overhaul (RCOH) is key to both the maintenance and modernization of each carrier in support of the second half of its service life. USS *George Washington* (CVN 73) began her mid-life recapitalization in August 2017 with re-delivery planned in summer 2021 to accomplish refueling of the ship's reactors, modernization, and repair of ship systems and infrastructure. The USS *John C Stennis* (CVN 74) RCOH advance planning contract award is scheduled in summer 2018.

Submarines

Ballistic Missile Submarines, coupled with the TRIDENT II D-5 Strategic Weapons System, represent the most survivable leg of the Nation's strategic arsenal and provide the

Nation's most assured nuclear response capability. The COLUMBIA Class program is on track to start construction in October 2020 and deliver to pace the retirement of our current ballistic missile submarines, deploying for its first patrol in FY 2031.

The FY 2019 President's Budget supports the funding required to achieve a target of 83 percent design completion at construction start in FY 2021. In September 2017, the Navy awarded General Dynamics Electric Boat a \$5.1B contract for the design completion, technology development, and prototype manufacturing for the COLUMBIA Class program. The contract leverages the authorities contained within the National Sea-Based Deterrence Fund and incentivizes construction readiness, affordability and supplier base capability and capacity. The FY 2019 President's Budget request also funds Continuous Production of Missile Tubes and will support Advance Construction of long lead time material. Both efforts will improve manufacturing efficiencies and vendor learning, maintain critical production skills, and reduce costs by leveraging high-volume procurements.

In addition to the Department of the Navy's budget request, the continued support of Congress for Naval Reactors' Department of Energy funding is vital to the Navy mission and ensuring the safe, reliable, and enduring operations of the nuclear-powered fleet. The President's FY 2019 budget fully funds Naval Reactors' request for the COLUMBIA Class SSBN. Recapitalizing this capability is critical to the Navy's readiness, specifically by ensuring adherence to the tight refueling and defueling schedule of nuclear-powered aircraft carriers and submarines.

The long-term strategy for our attack submarines and future payload submarine is the Tactical Submarine Evolution Plan, or TESP, which features the VIRGINIA Class SSN. The VIRGINIA Class program is continuing to deliver submarines within budget and with increased capability in each block. The Navy will be building on past success by awarding a Block V Multiyear Procurement (MYP) contract for 10 ships in FY 2019. This represents an increase from the FY 2018 budget request of one submarine in FY 2021, while also introducing the VIRGINIA Payload Module and Acoustic Superiority.

In 2016, the Navy established the Integrated Enterprise Plan to provide a framework for an integrated approach to support COLUMBIA, VIRGINIA, and FORD Class construction. This long-term government and contractor effort will guide the execution of these nuclear-powered platforms affordably, on time, to specifications, in the necessary quantities, and with acceptable risk.

Large Surface Combatants

The ARLEIGH BURKE Class (DDG 51) program remains one of the Navy's most successful shipbuilding programs with 65 ships delivered to the Fleet. The FY 2018-2022 MYP maximizes affordability, stabilizes the industrial base, and has the flexibility to add additional ships. All ships in this MYP will incorporate Integrated Air and Missile Defense and provide additional Ballistic Missile Defense capacity known as Flight III, which incorporates the Air and Missile Defense Radar (AMDR). AMDR 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 several stages of developmental testing, its entry into the Production and Deployment phase, and FY 2017 Flight III awards to both shipbuilders.

Complementing the DDG 51, the DDG 1000 ZUMWALT class guided missile destroyers are an optimally crewed, multi-mission surface combatant designed to provide long-range, precise, naval surface fire support. The DDG 1000 ship is nearing completion of industrial work in preparation to activate its combat systems in its homeport of San Diego. DDG 1001 has successfully completed acceptance trials and is scheduled for delivery in March 2018 and construction on DDG 1002 is 72 percent complete. After a comprehensive review of ZUMWALT Class requirements, the Navy decided in November 2017 to refocus the primary mission of the ZUMWALT Class Destroyers to Offensive Surface Strike. This change in mission adds lethality and offensive capabilities by providing fires against targets afloat and ashore.

Small Surface Combatants

The 2016 Force Structure Assessment revalidated the warfighting requirement for a total of 52 small surface combatants, including the LCS and the future, more capable Guided Missile Frigate (FFG(X)). The Navy will continue to refine the FFG(X) Conceptual Design with industry through FY 2019 to support a full and open competition with a single source award in FY 2020. The inventory objective for LCS is 32 ships and the FY 2019 President's budget includes one ship in FY 2019 to ensure that the requirement is met while helping to sustain the viability of the industrial base until the FFG(X) award in FY 2020. The FFG(X) will expand the competitive field of our shipbuilding industrial base.

The Program of Record (PoR) requirements for LCS Mission Packages (MP) have been updated. The new MP PoR requires 10 Surface Warfare (SUW), 24 Mine Countermeasures (MCM), and 10 Antisubmarine Warfare (ASW) for a total of 44 deployable MPs. Due to the expeditionary and modular nature of the MCM MP this capacity can be fielded by both LCS and other Vessels of Opportunity. The Navy plans to leverage the modularity and flexibility of elements of the ASW and SUW MPs for the FFG(X) design, however these elements will not be complete MPs nor will they be included in the LCS MM PoR quantity of deployable MPs.

The LCS MP program continues the development of the SUW, MCM, ASW capabilities, delivering individual mission systems incrementally as they become available. This past year LCS 4 deployed with the first installation of an over-the-horizon missile capability added to the SUW MP. The Surface-to-Surface Missile Module with Longbow Hellfire will add more lethality to the SUW MP. It is currently in testing with Initial Operational Capability (IOC) planned for FY 2019.

The ASW MP Escort Mission Module (EMM) uses a continuously active Variable Depth Sonar, integrated with a Multi-Function Towed Array to provide a revolutionary surface ship anti-submarine capability. Development and integration of the EMM, Light Weight Tow, and Torpedo Defense Module are ongoing. The ASW EMM and is on track to fully integrate with the LCS to support IOC with the ASW MP in FY 2019.

The Navy has scheduled three MCM systems for developmental tests (DT) and two for operational assessments (OA) this year, with Milestone C production decisions of the first two expected before the end of FY 2018. The MCM Unmanned Surface Vehicle (USV) is the tow platform for minehunting operations, and is based on the USV already used in the Unmanned Influence Sweep System program. The Navy's plan is to conduct MCM MP DT/OA in FY 2020 and achieve IOC in FY 2021.

Amphibious Ships

Amphibious ships operate forward to support allies, rapidly and decisively respond to crises, deter potential adversaries, and provide the Nation's best means of projecting sustainable power ashore. They also provide the preponderance of our naval response in humanitarian assistance and disaster relief. The operationally available inventory of amphibious warships and connectors remains below the 38 ship force structure requirement. The Navy is exploring service life extensions of existing ships and the acceleration of the

LX(R) program to mitigate this shortfall.

LHA 6 AMERICA Class ships are flexible, multi-mission platforms with capabilities that span the range of military operations, from forward-deployed crisis response to forcible entry operations. These ships will provide the modern replacements for the LHA 1 TARAWA Class ships and the aging LHD 1 WASP Class ships. USS *America* (LHA 6) deployed as the centerpiece of AMERICA Amphibious Readiness Group/Marine Expeditionary Unit, while USS *Tripoli* (LHA 7) is on schedule to deliver in December of 2018. The Detail Design and Construction contract was awarded in June 2017 for LHA 8 and delivery is planned for FY 2024. LHA 8 will return to well deck design to increase operational flexibility and includes a reduced island structure that increases flight deck space to enhance aviation capability.

The SAN ANTONIO Class (LPD 17) provides the ability to embark, transport, and land elements of a landing force by helicopters, tilt rotor aircraft, landing craft, and amphibious vehicles. USS *Portland* (LPD 27) will commission in April 2018 and the USS *Fort Lauderdale* (LPD 28) keel was laid in September 2017, with expected delivery in FY 2021. LPD 28's design and construction features will leverage many of the ongoing LX(R) design innovations and cost reduction initiatives that are necessary for the program to achieve affordability goals while maintaining the high-level capabilities of the LPD 17 class. LPD 29 was awarded in February and will continue with the LPD 28 design, but add the Enterprise Air Surveillance Radar (EASR) among other improvements.

LX(R) will be a flight upgrade to the LPD 17 Class. The lead ship for the LX(R) is currently programmed for FY 2020. Contract actions are planned for FY 2019 to facilitate Detail Design and Construction award in FY 2020.

Combat Systems

The Department continues to field the most capable and lethal surface and submarine combat systems in the world. The AEGIS Combat System Baseline 9 has been fielded on cruisers and destroyers and continues to deliver unprecedented offensive and defensive capabilities, including, offensive ASW and simultaneous air and ballistic missile defense on destroyers and Air Defense Commander capability on cruisers. AEGIS Baseline 10 will add the AN/SPY 6(V) AMDR providing significant performance improvements over the AN/SPY 1D(V) radar and expanding the sensor coverage and enhancing the Navy's ability to perform the Integrated Air and Missile Defense mission. The Navy is leveraging the investment in

AMDR to produce the EASR that will become the primary Air Search Radar for large deck ships and the Guided Missile Frigate. By using a common design and support strategy, we are enabling significant life cycle cost reduction for the Navy's surface radars.

The Ship Self-Defense System provides ships with greater capability to defend against anti-ship cruise missile attack and supports a myriad of mission areas on Carrier and large deck Amphibious Class Ships.

The Department continues to aggressively pursue affordable systems that are employable from multiple platforms. Under the Surface Electronic Warfare Improvement Program (SEWIP), the Navy is replacing aging analog electronic warfare systems first fielded in the early 1970's with new, digital systems. SEWIP Block 1 and 2 systems are in Full Rate Production and continue to be installed across the fleet. The SEWIP Block 3 program completed its Critical Design Review in 2017 and is on track for Milestone C in FY 2018. The Navy continues to deliver enhanced surface Undersea Warfare capability through the AN/SQQ-89A(V)15 aboard cruisers, destroyers, and LCS Mission Packages.

The Submarine community continues to successfully deliver improvements in Anti-Submarine Warfare utilizing bi-annual hardware Technology Insertions on even years and software Advanced Processing Builds on odd years. Leveraging commercial off-the-shelf (COTS) technologies via the Acoustic Rapid COTS Insertion (A-RCI) program mitigates COTS obsolescence while providing more capability improvement at lower costs.

Auxiliary Ships, Expeditionary, and Other Vessels

Support vessels such as the ESB, Expeditionary Transfer Dock (ESD), and the Expeditionary Fast Transport (EPF) provide additional flexibility to the Combatant Commanders. ESBs are flexible platforms capable of hosting multiple mission sets with airborne, surface, and subsurface assets. The USNS *Lewis B Puller* (ESB 3), the first Afloat Forward Staging Base variant of the ESD, joined the U.S. Fifth Fleet in the Persian Gulf in the Fall of 2017. ESB 4 delivered in February 2018 and ESB 5 is scheduled for delivery in May 2019. The Navy accepted delivery of the 9th EPF this past December and the final EPF, EPF 12, will start fabrication this year.

The Combat Logistics Force (CLF) consists of T-AOE fast combat support ships, T-AKE dry cargo and ammunition ships, and T-AO fleet replenishment oilers. CLF ships fulfill the vital role of providing underway replenishment of fuel, food, repair parts, ammunition and

equipment to forward-deployed ships and embarked aircraft, to enable them to operate for extended periods of time at sea. The KAISER Class (T-AO 187) fleet replenishment oilers will be replaced with the JOHN LEWIS Class fleet replenishment oilers, designated T-AO 205 Class. The start of construction for the first T-AO 205 is scheduled for September 2018.

The Department has begun procurement of a combined towing, salvage, and rescue (T-ATS) ship to replace the four T-ATF 166 Class fleet ocean tugs, which reach the end of their expected service lives starting in 2021, and the four T-ARS 50 Class salvage ships, which reach the end of their expected service lives starting in 2025. Fabrication is expected to begin in early FY 2019.

In 2016, the Navy and Coast Guard established an Integrated Program Office to rebuild the Nation's heavy icebreaking capability. The Navy is supporting the Coast Guard's efforts to responsibly and affordably recapitalize the heavy polar icebreaker fleet. The Coast Guard intends to leverage existing designs and mature technologies to mitigate schedule and cost risks using a strategy based on robust industry collaboration and competition. The detail Design and Construction Request for Proposal has been released with proposals due at the end of FY 2018. Based on this effort, the Coast Guard expects delivery of the first icebreaker as early as 2023.

Surface Ship Modernization and Service Life Extensions

The fiscal realities facing the Navy make it imperative that we modernize our in-service ships to achieve their expected service lives and also to extend the service lives through modernization of our ships to achieve a 355 ship Navy. The Navy and industry are collaborating on innovative approaches to conducting modernization of Cruisers and Dock Landing Ships. The FY 2019 President's Budget includes funding for the modernization of five destroyers to sustain combat effectiveness, ensure mission relevancy, and achieve the full expected service lives of the AEGIS Fleet. The request also continues to execute over the Future Years Defense Program (FYDP) for modernization of seven cruisers to ensure long-term capability and capacity for purpose-built Air Defense Commander platforms. The remaining four cruisers, which have Ballistic Missile Defense capability, will receive modernization to their hull, mechanical and electrical systems to support their operation through their engineered service life.

Unmanned Undersea Vehicles

The Navy is expanding its global reach through the development of unmanned capabilities to ensure maritime dominance and power projection. This requires persistent global presence in all maritime domains, the ability to deny our adversaries safe haven in the world's oceans, and the capability to generate kinetic and non-kinetic effects at the time and place of our choosing. The Navy executes multiple missions in and from the Undersea Domain including Strategic Deterrence; Intelligence, Surveillance, and Reconnaissance (ISR); ASW; Anti-Surface Warfare (ASuW); Strike; Naval Special Warfare; and Mine Warfare. The Navy is using a Family-of-Systems strategy to develop and employ unmanned undersea vehicles to conduct a spectrum of undersea missions that complement and relieve stress on the manned force. The Family leverages small and medium-sized commercial vehicles, and is developing large and extra-large vehicles.

Snakehead is the Large Vehicle which is the most critical member of the Family for overall Family development and tactical operations. Orca is the Extra Large Vehicle that is being designed to launch from a pier or large surface ship and operate for weeks or months at a time.

Ready Reserve Forces (RRF)

The Navy has coordinated planning options with the Office of the Secretary of Defense, U.S. Transportation Command (USTRANSCOM), and the Department of Transportation's Maritime Administration (MARAD) and developed a strategic sealift recapitalization strategy that includes a three-phased approach. The strategy includes the SLE of select Surge Sealift vessels, acquiring used vessels, and a new construction, common-hulled shipbuilding program. The Navy's long-term strategy advocates that new construction common hull vessels be assigned to the Maritime Prepositioning Force (MPF) as delivered, ensuring the Fleet has the latest capabilities to support employment across the full range of military operations. Existing MPF ships would rotate to surge, preserving capability and maintaining the requisite square footage to meet USTRANSCOM sealift capacity requirements.

Naval Aviation

With the support of Congress, the U.S. Navy and Marine Corps are implementing our "Vision for Naval Aviation 2025". This framework informs our investment priorities across

the triad of warfighting capability, capacity, and naval aviation wholeness; placing the right capability in the hands of the warfighter in the most affordable manner possible.

Airborne Early Warning Aircraft

The Navy continues its full support for E-2D. E-2D is the Navy's premier carrier-based Airborne Early Warning and Battle Management Command and Control (C2) system. The aircraft provides 'Theater Air and Missile Defense' and 'Naval Integrated Fire Control-Counter Air' capabilities. E-2D is capable of synthesizing information from multiple onboard and off-board sensors, making complex tactical decisions, and then disseminating actionable information to Joint Forces in a distributed, open-architecture environment.

Maritime Patrol Aircraft

The P-8A Poseidon recapitalizes the ASW, ASuW and armed ISR capabilities from the aging P-3C Orion. The P-8A combines the proven reliability of the commercial 737 airframe with avionics that enable integration of modern sensors and robust military communications. All squadrons are scheduled to complete transition by FY 2020. The P-8A program is meeting all cost, schedule and performance parameters and has surpassed reliability standards for operational availability.

Fixed Wing Aircraft

The KC-130J brings increased capability, performance, and survivability with lower operating and sustainment costs for the MAGTF. Today, the KC-130J is in high demand as it provides tactical air-to-air refueling, assault support, close air support and Multi-sensor Imagery Reconnaissance capabilities in support of Special Purpose MAGTFs and deployed Marine Expeditionary Units (MEUs). Targeted improvements include aircraft survivability through advanced electronic countermeasure modernization and obsolescence upgrades to the Harvest HAWK ISR/Weapon Mission Kit. The obsolescence upgrade includes compatibility with additional Hellfire variants and an improved full motion video data-link.

Operational Support Aircraft (OSA)

The C-40A is a military variant of the Boeing 737-700C, a combination passenger/cargo aircraft, with military avionics and aircraft survivability equipment. The

Marine Corps' intends to procure two C-40As in FY 2019 to replace the C-9B fleet it divested in April 2017. This procurement enables the time-sensitive movement of personnel and cargo for Marine forces and complies with current FAA communication, navigation, surveillance, and air traffic management requirements. Missions previously flown by C-9s are either not being accomplished or they are being accomplished via tactical aircraft like the CH-53E, MV-22 or KC-130J. Using tactical aircraft to conduct OSA missions not only increases their utilization rates, but also has a higher cost-per-flight-hour than the C-40A.

Unmanned Aviation

The Department has placed a priority on the development and fielding of unmanned systems leading to a fully integrated manned and unmanned fleet. Unmanned technology will not replace our Sailors and Marines; instead it will unlock their full potential as we integrate this technology within our total force.

MQ-4C (Triton)

The Department continues steady progress on development and fielding of the MQ-4C Triton Unmanned Aircraft System (UAS). Triton will be a core capability of Navy's Maritime Patrol and Reconnaissance Force and fill a vital role for the Joint Forces Maritime Component Commander by delivering persistent maritime ISR. The system will be a force multiplier for the Coalition and Joint Force, as well as the Fleet Commander, by enhancing situational awareness of the operational environment and shortening the sensor-to-shooter kill chain.

MQ-25 Carrier Based Unmanned Aerial System

Navy is committed to unmanned carrier aviation. MQ-25 Stingray will deliver the Navy's first carrier-based UAS to function primarily as a mission tanker to extend the range, reach, and lethality of the carrier air wing with secondary recovery tanking and ISR capabilities. MQ-25 will reduce current use of F/A-18E/Fs as carrier air wing tankers, freeing F/A-18E/Fs to execute strike fighter missions, effectively increasing strike fighter capacity within the carrier air wing. MQ-25 is a rapid acquisition program designed to significantly reduce its development and delivery timeline. The program has established a short chain of command to mitigate risk and expedite programmatic and technical trade decisions.

RQ-21A Blackjack

To meet the demand for persistent, multi-role ISR capability, the Navy and Marine Corps are building a balanced portfolio of manned and unmanned aircraft focused on missions in the maritime environment. This UAS, with the capability for expeditionary operations via deployment aboard amphibious ships, provides persistent ship and land based ISR support for expeditionary tactical-level maneuver decisions, unit level force defense, and force protection missions. The RQ-21 completed several combat deployments in 2017 and supported both East and West coast MEUs. The Blackjack has flown over 1,000 sorties and 5,600 hours in support of the MAGTF.

MAGTF Expeditionary UAS (MUX)

The MAGTF Expeditionary UAS (MUX) supports the Marine Operating Concept and is envisioned to be a multi-mission, long-range (690+ NM), long-endurance (24+ hours), platform that will complement MV-22 operations and operate from both sea and expeditionary bases. MUX will enable the MAGTF to provide, complement, or expand a Joint Force or geographic commander's capabilities during the conduct of campaigns, joint forcible entry operations, and crisis response.

Weapons

The Department continues to make significant strides in extending the fleet's layered defense battle-space while also improving the capabilities of the individual ship defense layers in order to pace the increasing anti-ship missile threat.

Standard Missile-6 (SM-6) provides theater and high value target area defense for the Fleet, and with Integrated Fire Control, has more than doubled its range in the counter-air mission. SM-6 Block I declared Full Operational Capability in December 2017 and the Navy plans to award a MYP contract for up to 625 SM-6 missiles in FY 2019. The MYP will span from FY 2019 to FY 2023, is projected to achieve over 10 percent savings vice annual procurement, and aligns with the potential SM-3 Block IB MYP in FY 2019.

The Evolved Sea Sparrow Missile (ESSM) provides another layer to the Navy's defended battle-space. ESSM Block 2 is on track to achieve IOC for AEGIS platforms in FY 2020 and Ship Self-Defense System platforms in the 2022-2023 timeframe.

The inner layer of the Fleet's layered defense is the Rolling Airframe Missile (RAM)

designed to pace the evolving anti-ship cruise missile threat and improve performance against complex stream raid engagement scenarios. The RAM Block 2 is on track to receive a Full Rate Production Decision in FY 2018.

The FY 2019 President's Budget includes funding to continue upgrades to the Standard Missile-2 (SM-2) inventory with active guidance utilizing accelerated acquisition authorities. This investment provides an affordable, integrated fire control capable, area defense missile to counter stressing threats.

Cruise Missile Strategy

The Department has aligned its Cruise Missile Strategy along warfighter domains to pursue maximized lethality while minimizing overall costs to the taxpayer. The first tenet of our strategy is to sustain the highly successful, combat proven, Tomahawk cruise missile inventory through its anticipated service-life via a mid-life recertification program starting in the first quarter of FY 2019. This recertification program will increase missile service-life by an additional 15 years (total of 30 years) and enable the Department to support Tomahawk in our active inventory through the mid-late 2040s. In concert with our recertification program we will integrate modernization and technological upgrades and address existing obsolescence issues. In addition, we are developing a Maritime Strike Tomahawk capability to deliver a long-range anti-surface warfare capability.

The Department will field the Long-Range Anti-Ship Missile (LRASM) as the air-launched Offensive Anti-Surface Warfare/Increment 1 (OASuW/Inc. 1) material solution to meet near to mid-term anti-surface warfare threats. LRASM is pioneering accelerated acquisition processes. We anticipate LRASM will meet all Joint Chiefs of Staff-approved warfighting requirements, and deliver on-time within cost.

Finally, the Department plans to develop follow-on next generation strike capabilities such as the surface and submarine launched Next Generation Land Attack Weapon (NGLAW). NGLAW will have both a long-range land strike and maritime ASuW capability that initially complements, and then replaces, the highly successful Tomahawk Weapon System.

United States Marine Corps Expeditionary Warfare

Expeditionary Warfare

The principle of Expeditionary Warfare is to operate forward, to exploit the seas as maneuver space as a base for global power projection, and to be ready to maneuver to shore when so ordered. Our ability to deploy from the sea in austere environments at a time and place of our choosing gives us significant tactical, operational and strategic advantages over potential adversaries. That ability is provided through the combination of connectors that move forces from the sea base to the objective sites and sustain the organic capability of those forces to maneuver and fight on the objective.

The Navy/Marine Corps team provides the Combatant Commanders and our Nation the options needed to engage with our partners, to deter our adversaries and, when needed, to fight and win. That capability is underpinned by our disciplined, well-trained and motivated Sailors and Marines equipped with the “right” amphibious ships, aircraft and weapons in our arsenal. Unique to our expeditionary warfare capabilities is the ability to exploit the sea as maneuver space and conduct operations in international waters and airspace. Tactically, the ability to project multiple elements of a landing force ashore via multiple entry points using both vertical and surface means gives us greater flexibility in maneuvering into positions of advantage over an adversary. Our service capstone concept, the Marine Corps Operating Concept, envisions a future Marine force fighting at and from the sea to gain and maintain sea control and enable freedom of maneuver within an Advanced Naval or Joint Task Force as directed through the National Defense Strategy and Defense Planning Guidance.

Connectors

Ship-to-shore connectors move personnel, equipment and supplies, maneuvering from a sea base to the objective. These are critical enablers for any naval force by closing the last “tactical mile” with the adversary. Modern aerial connectors, such as the MV-22 Osprey and CH-53K King Stallion, extend operational reach and lift capacity, revolutionizing our ability to operate from the sea, austere locations, and previously damaged airfields within a contested environment. Aerial connectors alone do not suffice; the Navy is in the process of modernizing the surface connector fleet by replacing the aging Landing Craft Air Cushion (LCAC) and the 50-year-old fleet of Landing Craft Utility (LCU). This system of surface

and aerial connectors will enable the Joint Force to establish a web of sensor, strike, decoy, and sustainment locations based on land and sea that complicates the strategic and operational decision-making of our most advanced rivals, thus attacking their Anti-Access/Area Denial (A2AD) strategies. Continued funding of the modernization, maintenance, and service life extension programs of our existing fleet of connectors is critical to enabling our success in future security environments.

The FY 2019 President's Budget includes 37 LCAC 100 Class air cushioned vehicles. The Ship to Shore Connector program will replace aging LCACs, which have undergone a Service Life Extension Program (SLEP) and a Post-SLEP Extension program. Additionally, the FY 2019 President's Budget includes the procurement of 18 LCU 1700 Class craft, which will recapitalize, in part, the aging LCU 1610 Class. Both variants still require additional funding for post-delivery and outfitting efforts to provide Fleet craft which are capable of supporting operational tasking.

These platforms are essential in connecting the combat power and logistics sustainment the seabase provides to expeditionary forces operating in the littorals. The Department will continue to explore future connector options that will increase our ability to exploit the sea as maneuver space by increasing range, speed, capacity, and force interoperability.

Combat and Tactical Vehicles

Our Ground Combat and Tactical Vehicle Strategy (GCTVS) provides a framework for portfolio management and enterprise decision support. The Marine Corps is investing approximately 29 percent of its modernization resources into GCTV systems within the FYDP. The overarching combat and tactical vehicle investment priority is the modernization of Assault Amphibian capability through the Amphibious Combat Vehicle (ACV) program as the means to incrementally replace the legacy Assault Amphibious Vehicle (AAV).

The first phase and increment of the ACV program (ACV 1.1) is on schedule for Milestone C decision and down-select to a single contractor in June of 2018. Thus far, it is successfully performing at or above the required performance parameters with both vendors demonstrating the capacity to meet objective requirements for ship-to-shore water mobility. Both manufacturers have delivered their required number of vehicles and have been going through rigorous developmental testing including water mobility and under-vehicle blast

protection tests as well as operational testing with the user community.

The second highest priority for combat and tactical vehicle investment remains the replacement of the legacy high mobility, multi-purpose, wheeled vehicle (HMMWV) fleet beginning with that portion that is most at risk; those trucks that perform a combat function and are typically exposed to enemy fires. In partnership with the Army, the Marine Corps has sequenced the Joint Light Tactical Vehicle (JLTV) program to ensure affordability in conjunction with the execution of the ACV program. This approach enables an affordable, incremental, and simultaneous modernization of the two most stressing gaps within the GCTV portfolio.

Marine Air-Ground Task Forces

The focus of our ground modernization efforts continues to be our combat and tactical vehicle portfolio, along with the C2 systems needed to leverage the entire MAGTF once ashore.

Critical to the success ashore of the MAGTF is our ability to coordinate and synchronize our distributed C2 sensors and systems. Our modernization priorities in this area are the Ground/Air Task Oriented Radar (G/ATOR) and the Common Aviation Command and Control System (CAC2S). These systems will provide modern, interoperable technologies to support real-time surveillance, detection and targeting and common C2 suite to enable the effective employment of that and other sensors and C2 suites across the MAGTF.

G/ATOR ensures the Marine Corps will be in full control of MAGTF airspace. It serves as the foundation for Commander, Joint Force Air Component delegation of airspace control to the future MAGTF, and provides MAGTF commanders the freedom of action to employ organic surface and air fires. G/ATOR detects the most challenging air threats for the MAGTF and will pace the threat for years to come.

CAC2S provides the tactical situational display, information management, sensor and data link interface, and operational facilities for planning and execution of Marine Aviation missions within the MAGTF. CAC2S will eliminate the current stove-piped, dissimilar legacy systems and will add capability for aviation combat direction and air defense functions by providing a single networked system. CAC2S will be the primary C2 system that integrates MAGTF aviation operations with Joint, combined, and coalition aviation C2 agencies.

Counter Unmanned Aircraft Systems (C-UAS)

The proliferation and technological progression of readily available UASs to state and non-state actors have advanced at an unprecedented pace. The Department is pursuing an aggressive plan that delivers the most capable, available C-UAS solutions for the warfighter in the near term, while simultaneously pursuing advanced technologies to support an enduring C-UAS capability.

Other MAGTF Programs

Individual Marines are the foundation of the Marine Corps, the MAGTF and our expeditionary capability. In addition to the major programs described above, this budget supports the continued delivery of required warfighting capabilities to our individual Marines and our flexible MAGTF structure in a timely and affordable manner. The Marine Corps continues to invest in the weapons, individual protective equipment, tactical radios, training systems, and information technology necessary to ensure an effective and efficient fighting force and keep faith with our commitment to those individual Marines who shoulder the burden and privilege of being America's expeditionary force in readiness.