

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
SEAPOWER AND EXPEDITIONARY FORCES AND
AIR AND LAND FORCES SUBCOMMITTEES

STATEMENT OF

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BEFORE THE

SEAPOWER AND EXPEDITIONARY FORCES
AND
AIR AND LAND FORCES
SUBCOMMITTEES

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

DEPARTMENT OF THE NAVY'S AVIATION PROCUREMENT PROGRAM

MARCH 24, 2010

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NAVAL AVIATION PROGRAMS OVERVIEW

The Fiscal Year 2011 President's Budget implements a recapitalization strategy for new capabilities and initiatives, reduced operating costs, and sustainment of legacy fleet aircraft that are performing magnificently in current operations. We are always aware that our decisions on programmatic, budgeting and procurement have a direct impact on the young men and women we send overseas to fight and win our nation's wars, and providing the proper weapons systems for those warfighters is a charge we take very seriously.

We continue to work with industry in seeking ways to reduce costs in production contracting strategies on the F/A-18E/F, the H-1, the F-35B and F-35C, the MH-60R/S and the MV-22B. The Department of the Navy (DoN) continues the development and low rate procurement of the F-35B and C models, E-2D Advanced Hawkeye, CH-53K Heavy Lift Replacement, unmanned aircraft systems and new strike weapons capabilities. In total, with our Fiscal Year 2011 funding, Navy and Marine Corps aviation will procure 103 tactical and fixed-wing aircraft, 100 rotary-wing aircraft and three MQ-8 Vertical Takeoff and landing Unmanned Aerial Vehicles (VTUAVs) for a total of 206 aircraft.

TACTICAL AIRCRAFT/TACTICAL AIRCRAFT SYSTEMS

F-35 Joint Strike Fighter (JSF)

The DoN is committed to both the STOVL and CV variants of the JSF as they are essential to our long-term Naval and Marine Corps Aviation strategy and the nations security. The Fiscal Year 2011 President's Budget requests \$1.4 billion in RDT&E and \$4.5 billion in Aircraft Procurement, Navy (APN) for 20 JSF aircraft (13 F-35B and seven F-35C) and associated aircraft hardware and spares. These resource requirements reflect the F-35 program's restructure recently approved by the Secretary of Defense.

The commonality designed into the joint F-35 program will minimize operating costs of Navy and Marine Corps tactical aircraft, and allow enhanced interoperability with our sister service, the United States Air Force (USAF) and the eight partner nations participating in the development of this aircraft. The F-35 aircraft will provide combatant commanders greater flexibility across the range of military operations. A true fifth-generation aircraft, the JSF will enhance precision strike capability through unprecedented stealth, range, sensor fusion, radar performance, combat identification and electronic attack capabilities as compared to legacy platforms. It is important to stress that after the extensive review that led to the recent F-35 program restructure, no fundamental technology or manufacturing problems were discovered, nor were there any changes to F-35 performance requirements. It will also add sophisticated electronic warfare capabilities, as compared to the legacy platforms to be replaced, and will tie together disparate units scattered across the battlefield, in real time. All F-35 variants are projected to meet their respective Key Performance Parameters (KPPs).

The F-35B Short Takeoff Vertical Landing (STOVL) variant combines the multi-role versatility and strike fighter capability of the legacy F/A-18 with the basing flexibility of the AV-8B and the potential for electronic warfare dominance of the EA-6B. The Marine Corps intends to

leverage the F-35B's sophisticated sensor suite and the very low observable (VLO) fifth-generation strike fighter capabilities, particularly in the area of data collection and information dissemination, to support the Marine Air Ground Task Force (MAGTF) well beyond the abilities of today's MAGTF expeditionary attack, strike and electronic warfare assets. Having these capabilities in one aircraft will provide the joint force commander and the MAGTF commander unprecedented strategic and operational agility. The F-35C carrier variant (CV) complements the F/A-18E/F Block II and EA-18G in providing survivable, long-range strike capability and persistence in an access denied environment. The F-35B and F-35C will provide the Expeditionary Strike Group and Carrier Strike Group commanders a survivable, "day-one" strike capability in a denied access environment with the tactical agility and strategic flexibility to counter a broad spectrum of threats and win in operational scenarios that cannot be addressed by current legacy aircraft.

Four System Development and Demonstration (SDD) jets (AF-1, BF-1, BF-2, and BF-3) are now in flight testing, while AA-1 has completed its flight testing requirements and awaits a live fire test at the Naval Air Warfare Center, China Lake. CF-1 is in the run station with an In-Service Release engine. CF-2 has recently left the production line and is going through system checkout. BF-4 is currently in ground tests in Fort Worth and is expected to ferry to Naval Air Station (NAS) Patuxent River on May 7, 2010. The remaining SDD jets and ground test articles, plus Low Rate Initial Production (LRIP) I, LRIP II, and LRIP III aircraft, are in various stages of production. With regard to the flight test program, the initial Conventional Takeoff and Landing (CTOL) aircraft (AA-1) has demonstrated outstanding performance with 91 sorties (~126 flight hours) flown through January 2010.

BF-1, the first STOVL flight test jet, has flown more than 30 sorties, in preparation to its first vertical landing (VL). It has demonstrated smooth and positive flight characteristics during transitions from conventional flight to slow speed flight and accomplished the first STOVL transition to a vertical landing (VL) flight on the 18th of March 2010. BF-2 has ferried to NAS Patuxent River and has completed 16 sorties with more than 28 hours of accumulated test time. BF-3 was ferried to NAS Patuxent River in February 2010 and completed its initial three test sorties and BF-4's first flight is anticipated to occur within the next 60 days. We have been pleased that the initial STOVL/F-35B test aircraft that have arrived at NAS Patuxent River have required little postflight work, as this demonstrates that the prime contractor is continuing to mature its production line

The F-35B structural testing that has been completed will enable expansion to the full STOVL envelope – though we have had recent challenges with the STOVL door operations we continue to fly as we investigate and make any required modifications. F-35C Full Scale Drop Test was started on March 4 at Vought Aircraft Test Laboratory in Dallas, TX. The mission systems testing completed to date has provided us additional confidence in F-35 integrated sensor functionality – and we plan to continue to further mature this fifth-generation integrated sensor performance during the next 12 months. Additionally, we have recently cleared BF-2 to utilize its on-aircraft speech recognition capability for flight test, which, when completed, promises to enhance warfighting capability and reduce pilot workload. The signature testing completed to date has built confidence in the VLO performance as we await the first full signature jet to demonstrate overall operational mission effectiveness.

The DoN has taken special interest in the F-35 air/ship integration. Initial ship suitability testing has been completed and our computational fluid dynamic models are being validated to ensure the effects of F-35 propulsion systems on LH and CVN-class ships and ship systems are well understood and addressed. To date, there are no known air-ship integration issues which we cannot overcome; future test events will refine our integration efforts and validate our initial analysis. With respect to logistic support for test and deployment, dedicated aircraft/ship variant teams are in place, all known logistical risks have mitigation plans, and the test and operational use of our Autonomic Logistics & Global Sustainment (ALGS) systems will continue to shape and mature our global sustainment implementation plans with our eight partner countries.

The Initial Operational Capability (IOC) is determined by the Service based on both the program's performance and how the Service defines IOC. For the Marine Corps F-35B, IOC is defined as a squadron of ten aircraft able to execute the full range of TACAIR directed mission sets and to deploy on F-35B-compatible ships and to austere expeditionary sites. The Marine Corps plans to IOC with an Operational Requirements Document (ORD) compliant Block 2B aircraft. For the Navy F-35C, IOC is defined as a squadron of ten ORD compliant Block 3 aircraft that are ready to deploy and have completed IOT&E. With the recent program restructuring, IOC is projected to be 2012 for the F-35B and 2016 for the F-35C.

The F135 propulsion system has begun the transition from development to production with the delivery of the first three LRIP 1 engines. Six additional production engines are in assembly and deliveries will ramp up to three engines per month by the third quarter of 2010. Notwithstanding this significant progress, we continue to focus on engine cost. The Office of the Secretary of Defense recently chartered a Joint Assessment Team (JAT) to investigate F135 cost and cost objectives. The JAT assessed that the F135 engine cost goals are achievable with the proper investment in cost reduction initiatives. The focus in the coming year will be to ensure the engine manufacturer and the government implement the necessary efforts to achieve the cost goals. The current LRIP 4 engine proposal shows that the engine manufacturer has begun to reduce cost in alignment with the JAT assessments and recommendations.

F/A-18 Hornet

TACAIR is made up of 1180 total aircraft, of which 88 percent are Navy and Marine Corps Hornets (20 Navy squadrons totaling 400 Super Hornets; 17 Navy and 13 Marine squadrons totaling 635 legacy A-D Hornets). Super Hornets and legacy Hornets have conducted over 130,000 combat missions in support of Operations IRAQI FREEDOM (OIF) and ENDURING FREEDOM (OEF) since September 11, 2001. While deployed both ashore and at sea aboard our aircraft carriers, F/A-18s have brought significant numbers of precision ordnance and laser-guided munitions to the fight, and have employed numerous rounds of 20mm ammunition supporting forces during strafing runs. These aircraft continue to provide vital overwatch and direct support to our troops on the ground in Iraq and Afghanistan.

F/A-18 A/B/C/D (Legacy) Hornet

The Fiscal Year 2011 President's Budget request is \$258.0 million in APN for the continuation of the systems upgrade programs for the F/A-18 platform. As the F/A-18 program transitions to the F/A-18E/F and JSF, today's inventory of 635 F/A-18A/B/C/Ds will continue to comprise more than half of the Navy's strike fighter inventory until 2013. In order to maintain a tactical advantage, we will procure and install advanced systems (Joint Helmet-Mounted Cueing Systems (JHMCS), Multi-Function Information Distribution System (MIDS) and Advance Tactical Forward Looking Infra-Red) (ATFLIR)/LITENING) on selected F/A-18A/B/C/D aircraft. The requested funds will support the APG-73 radar obsolescence management program and procure APG-79 radars in order to replace APG-73 radars in early Block II Super Hornets, each a vital piece of the TACAIR mission for the near future.

These funds will also procure and install centerbarrel modifications, which will be a major contributor to extending the service life of the F/A-18 C/D fleet from 6,000 to 8,000 hours and beyond. The Service Life Management Program (SLMP) continues to monitor and improve the health of the legacy F/A-18A-D fleet through analyses of TACAIR inventories and the service life of each airframe.

The Marine Corps will upgrade 56 Lot 7-9 F/A-18As and 30 Lot 10/11 F/A-18Cs to a Lot 21 avionics capability with digital communications, a tactical data link, JHMCS, MIDS and LITENING. The Marine Corps will also upgrade 72 F/A-18D models' APG-73 radars with the Expand 4/5 upgrade, providing an enhanced Synthetic Aperture Radar (SAR) capability. The Marine Corps anticipates these upgrades will enhance the current capabilities of these aircraft with the digital communications, tactical data link and Advanced Tactical Airborne Reconnaissance Systems (ATARS) required for them to remain viable and relevant. The Marines expect the F/A-18(A++/C/D) to remain in the active inventory until Fiscal Year 2022 and in the reserve inventory until Fiscal Year 2023.

The Marines are also employing the LITENING targeting pod on F/A-18A+/C/D aircraft in expeditionary operations including OEF. When combined with data link hardware, the LITENING pod provides real-time video to ground forces through Remotely Operated Video Enhanced Receiver (ROVER) and Video Scout ground workstations.

F/A-18 E/F Super Hornet

The Fiscal Year 2011 President's Budget requests \$1.8 billion in APN-1 for 22 F/A-18 E/F Block II aircraft. The F/A-18E/F continues to transition into the fleet, improving the survivability and strike capability of the carrier air wing. The Super Hornet provides a 40 percent increase in combat radius, 50 percent increase in endurance and 25 percent increase in weapons payload over the legacy Hornets. The program will complete procurement of the 515 budgeted aircraft in 2013. Production line shutdown will begin in Fiscal Year 2013 with the final shutdown occurring in Fiscal Year 2015.

The APG-79 Active Electronically Scanned Array (AESA) radar system was installed in all production F/A-18E/Fs and EA-18Gs beginning with Lot 30, and a retrofit program is modifying

135 Lot 26-29 Block IIs with APG-79 radars. All 458 Block II Super Hornets will be AESA equipped, providing the Super Hornet a significant increase in detection range, lethality and survivability over the legacy Hornets. AESA squadrons have been successfully deploying since 2008 and are highly valued by Fleet Commanders.

The Super Hornet uses an incremental development approach to incorporate new technologies and capabilities – the JHMCS, ATFLIR (with shared real-time video), Shared Reconnaissance Pod System (SHARP) and MIDS data-link. The F/A-18E/F Fiscal Year 2011 Budget request also includes \$84.4 million in APN to implement commonality, maintain capabilities and improve reliability and structural safety. The Navy continues to explore the possibility of a multiyear procurement for 124 F/A-18E/F and EA-18G series aircraft (Fiscal Years 2010-2013) with the Secretary of Defense.

AV-8B Harrier

The Fiscal Year 2011 Budget requests \$22.9 million in RDT&E funds to continue development of the AV-8B Readiness Management Plan (RMP), Digital Improved Triple Ejector Racks (DITER), and Engine Life Management Plan (ELMP) to include continued Accelerated Simulated Mission Endurance Testing (ASMET). The DITER effort will increase the digital weapons carriage capability of the Harrier and thereby support combat operations more effectively. The Fiscal Year 2011 Budget also requests \$19.4 million procurement funds for ELMP upgrades and the RMP, which addresses aircraft obsolescence and deficiency issues associated with sustaining the Marine Corps' AV-8B fleet.

Today's Harrier - equipped with precision weapons, LITENING targeting pods with a video downlink to ROVER ground stations, and digitally-aided Close Air Support (CAS) (Marine Tactical System (MTS) protocol) - has proven to be an invaluable asset for the MAGTF and joint commander across the spectrum of operations. The AV-8B program continues to address attrition recovery and other inventory sustainment efforts to mitigate significant legacy inventory shortfalls and obsolescence issues. The AV-8B continues to be deployed heavily in support of OEF and for other emerging operational contingencies; each Marine Expeditionary Unit (MEU) that sails does so with embarked AV-8Bs. In 2009 the Harrier ended a highly successful six-year rotation in Iraq; we then transitioned the aircraft to Afghanistan. There the AV-8B is supporting ground forces with its precision weapons, 25-millimeter cannon and sophisticated sensor suite. The Harrier has a proven combat record, and its weaponry and basing flexibility have been invaluable as we deploy it into the fight from the decks of L-class ship as well as ashore in the austere Afghanistan environment. Planned capability upgrades, obsolescence mitigation and readiness initiatives will ensure the AV-8B remains relevant, healthy and sustained through at least 2022.

Although the LITENING targeting pod is managed by the AV-8B program office, the pod is carried on all three USMC TACAIR platforms. Building on its extensive and proven combat record, the Air Force and Marine Corps are upgrading the LITENING pod to the G4 (fourth generation) standard to support engaged Marine Corps, joint and coalition warfighters. The Fiscal Year 2011 Budget requests \$72.1 million in procurement funding for USMC expeditionary LITENING targeting pod upgrades, which include enhanced Forward Looking Infra-red (FLIR) and charge-coupled device (CCD) optics, a Laser Target Imaging Processor (LTIP), a more

powerful video downlink transmitter, and improved ground moving target and air-to-air target tracking systems.

TACAIR Inventory Management

In 2009, we estimated the DoN Strike Fighter Shortfall (SFS) to be 146 aircraft. With the changes in the Fiscal Year 2011 President's Budget, the Strike Fighter Shortfall analysis was updated and the peak DoN Shortfall rose from 146 to 177 aircraft - primarily due to the F-35 delivery ramp reduction of 55 aircraft and removing the assumption of aircraft reaching 10,000 flight hours. Today, with the application of our management strategies and levers, the peak can be managed to about 100 aircraft in 2018.

We are closely managing the flight hours and fatigue life of our tactical aircraft. Since 2004, we have provided guidance and actions to optimize aircraft utilization rates while maximizing training and operational opportunities. The F/A-18A-D Inventory Management Forecasting Tool is used to project the combined effects of TACAIR transition plans, retirements, attrition and pipeline requirements on the total F/A-18A-D aircraft inventory. The model is updated with the most recent data and forecasts the strike fighter inventory compared to the existing requirements. Critical model variables include JSF deliveries, force structure, usage rates, life limits, depot turnaround time, Fatigue Life Expended (FLE), catapult launches and arrested landings, and field landings.

Faced with an increased Shortfall, the DoN has continued to identify further opportunities to reduce its impact. The Marine Corps has modified its F-35 transition plan by transitioning some Hornet squadrons earlier and leveraging the service life remaining in the AV-8B fleet. Management "levers" have been identified: accelerating the transition of five legacy F/A-18C squadrons to F/A-18 E/F; transitioning two additional F/A-18 C squadrons to F/A-18E/F using the remaining attrition F/A-18E/F reserve aircraft; reducing the Navy Unit Deployment Program (UDP) and USMC Expeditionary F/A-18A+/C/D squadrons from twelve to ten aircraft per squadron. Some of these measures are dependent on reduced demand in Global Force Management (GFM) requirements.

We are continuing to perform High Flight Hour (HFH) inspections to extend the service life limits of F/A-18A-D aircraft from 8,000 to 8,600 flight hours. Analysis revealed that extensive areas of the legacy F/A-18 airframe require Service Life Extension Program (SLEP) inspections and modifications in order to reach the service life goals of 10,000 hours. The F/A-18A-D SLEP engineering development program will complete in 2012. Together these efforts can extend the F/A-18 A-D service life and reduce the impact of the Strike Fighter Shortfall.

The 146 USMC AV-8B aircraft (in seven squadrons) currently are not challenged by FLE as are the DoN's F/A-18 aircraft. However, continued investment in engine sustainment, in avionics and in managing airframe component obsolescence are critical to ensuring these aircraft remain viable contributors to the TACAIR transition. Continued investment in Program Related Engineering (PRE)/Program Related Logistics (PRL) in the Operations and Maintenance, Navy (OMN) is critical for sustaining the combat relevancy of the DoN's legacy platforms through the TACAIR transition.

The DoN long term Shortfall reduction strategies will be addressed in the Fiscal Year 2012 President's Budget development. Currently, items under review are the F/A-18A-D SLEP and opportunities for optimizing depot turn around times. We will continue to explore other mitigation alternatives. Applying the mitigation levers available to us and considering long term strategies such as SLEP, the DoN believes the Strike Fighter Shortfall is manageable.

Airborne Electronic Attack (AEA) / EA-18G Growler

The Fiscal Year 2011 President's Budget request is \$22.0 million in RDT&E,N for correction of deficiencies and \$1.0 billion in APN for 12 full rate production (FRP) EA-18G aircraft. The program completed operational evaluation in May 2009. The Fleet Replacement Squadron (FRS) has achieved Ready for Training (RFT) and the first deployable EA-18G squadron achieved Safe for Flight in September 2009. Initial Operating Capability (IOC) was achieved in September 2009 and a favorable FRP decision was obtained in November 2009.

The EA-18G began replacing carrier-based Navy EA-6B aircraft in 2009 and is currently programmed to continue these transitions through 2014. A total of 34 aircraft have been procured to date. As directed by the Quadrennial Defense Review (QDR), the Navy will procure an additional 26 EA-18G aircraft across the FYDP to increase joint force capacity to conduct expeditionary electronic attack, increasing the program of record to 114. These additional aircraft will be utilized to fill the Navy's four expeditionary electronic attack squadrons currently using the legacy EA-6B Prowler.

The Navy is completing an Analysis of Alternatives (AoA) to determine the best path forward for the Next Generation Jammer (NGJ). The NGJ will replace the ALQ-99 pods currently flown on the EA-18G and EA-6Bs and will provide the Office of the Secretary of Defense (OSD) and the Services an opportunity to introduce a comprehensive electronic attack capability to the EA-18G as well as all variants of the F-35 JSF.

Airborne Electronic Attack (AEA) / EA-6B Prowler

The Fiscal Year 2011 President's Budget request includes \$24.3 million in RDT&E,N for electronic warfare counter response, \$33.8 million in APN for common AEA systems and \$29.9 million in APN for all EA-6B series aircraft. Currently there are 92 EA-6Bs in the DoN to support 61 operational aircraft in 14 active component squadrons and one reserve component squadron. This includes 76 Navy and Marine Corps ICAP II aircraft and 16 Navy Improved Capability (ICAP) III aircraft. The replacement of Navy EA-6B aircraft with EA-18G was expected to be completed in 2012; however, the Navy now plans to complete its EA-6B program of record in 2014.

The Marine Corps currently has 20 operational EA-6B ICAP II aircraft in four VMAQ squadrons. Overseas Contingency Operations (OCO) funds were used to purchase 16 ICAP III modification kits and installations. The transition to the ICAP III aircraft began in March 2010 and is planned to complete in 2013. As the Navy transitions ICAP III squadrons to EA-18G, those aircraft will be transferred to the Marine Corps. Once the transition is complete, the

Marine Corps will have 32 ICAP III to support its EA-6B program of record through 2019. Aircrew training for the DoN will be conducted at VAQ-129 through 2014. Once the Navy has completed its transition from the EA-6B, the Marine Corps may be required to establish a Fleet Replenishment Squadron (FRS) to support its program of record.

Marine Prowlers have been employing the LITENING targeting pod in expeditionary operations including OEF. When combined with data link hardware, the LITENING pod provides real-time video to ground forces through ROVER workstations. Additionally, the Collaborative On-line Reconnaissance Provider/Operationally Responsive Attack Link (CORP/ORAL) Joint Combat Technology Demonstration (JCTD) is demonstrating the concept of networked, on-demand Intelligence, Surveillance and Reconnaissance (ISR) and electronic warfare from manned and unmanned platforms utilizing the link capabilities in LITENING pods.

E-2D Advanced Hawkeye (AHE)

The E-2D AHE replaces the current E-2C Hawkeye aircraft. E-2D will be a critical enabler of transformational ISR capability and one of the pillars of theater air and missile defense. Its radar will provide enhanced detection and surveillance capability in overland, littoral and open ocean environments.

The Fiscal Year 2011 President's Budget requests \$171.1 million in RDT&E,N for continuation of SDD and \$937.8 million in APN for four LRIP III aircraft and advanced procurement for Fiscal Year 2012 LRIP IV aircraft.

A Milestone C decision was achieved in the third quarter of 2009 and a contract awarded for two LRIP I aircraft. In Fiscal Year 2010 Congress appropriated \$742.1 million APN for three LRIP II aircraft and advanced procurement for Fiscal Year 2011 LRIP III aircraft.

T-6B Joint Primary Aircraft Training System (JPATS)

The T-6 is the primary flight training aircraft for Navy and Marine Corps pilots and Naval Flight Officers(NFO), replacing the T-34C. The current requirement is for 315 aircraft, of which 161 aircraft have been procured and 60 aircraft delivered to date. Of those 60 aircraft, six are the newer T-6B aircraft which is the upgraded avionics variant of the T-6A. The Fiscal Year 2011 President's Budget request includes \$266.1 million to procure 38 aircraft under a USAF contract. The JPATS program delivered the first two T-6B aircraft to the Navy in August 2009. The program is on track for T-6B IOC in April 2010 at NAS Whiting Field, FL. Funding requested in the President's Budget will also support the critical sustainment of the TH-57, the training helicopter for Navy and Marine Corps helicopter pilots, and of the T-45, the Navy's training jet for future jet pilots and Naval Flight Officers.

ATTACK/SURVEILLANCE AIRCRAFT

P-8A Poseidon

The future of the Navy's maritime patrol force includes plans for sustainment, modernization, and re-capitalization of the force. The P-8A Poseidon is the replacement aircraft for the P-3C Orion. The Fiscal Year 2011 President's Budget requests \$929.2 million in RDT&E, N for development and \$1.991 billion in APN for procurement of seven P-8 Poseidon aircraft. Fiscal Year 2011 development funding will support the continued development of the P-8A and associated testing. Fiscal Year 2011 funds support the procurement of the seven LRIP P-8A aircraft which are scheduled to begin delivery in January 2013 and advanced procurement for the subsequent LRIP. The program is on track for IOC in late 2013 when the first squadron will have transitioned and be ready to deploy forward in support of the combatant commander. The P-8A program is meeting all cost, schedule and performance parameters in accordance with the Acquisition Program Baseline (APB).

The program completed the Interim Program Review in April 2009 and awarded the Advanced Acquisition Contract for LRIP advanced procurement. The first five test articles (three flight test aircraft and two ground test articles) are on schedule for delivery. Boeing has completed fabricating the first five of eight test aircraft. The remaining three flight test aircraft will commence fabrication this year. The first test flight using T-1, the airworthiness test aircraft, occurred on October 15, 2009, in Seattle, WA. After an initial period of flight testing T-1 completed its last phase of Installation and Check-out for the aircraft instrumentation system. The program is currently undergoing ground testing in preparation for resuming flight tests in March 2010.

P-3C Orion

In Fiscal Year 2011, \$228.0 million is requested to sustain the P-3C until transition to the P-8A Multi-mission Maritime Aircraft. More than half of this amount (\$153.5 million) is for wing modifications, which will allow airframe sustainment to support the CNO's P-3 Fleet Response Plan, as well as supporting EP-3E requirements, which are executed within the P-3 Airframe Sustainment Program. The P-3 is being sustained to keep the aircraft a viable warfighter until it is replaced by P-8. Results of the P-3 Service Life Assessment Program (SLAP) revealed the need for an aggressive approach to P-3 airframe sustainment. The aircraft is well beyond planned fatigue life of 7,500 hours for critical components, with an average airframe usage of 16,000 hours.

In December 2007, ongoing refinement of the model used to calculate wing stress indicated that the lower aft wing surface (Zone 5) of the P-3 aircraft had fatigue beyond standards for acceptable risk resulting in the grounding of 39 P-3 aircraft. As of January 15, 2010 a total of 49 aircraft have been grounded for Zone 5 fatigue. As of March 5, there had been 14 Zone-5 modifications completed and the aircraft returned to the fleet; there were 32 Zone-5 aircraft in work. Current mission aircraft availability is 65. Key elements of the sustainment approach are strict management of requirements and flight hour use, special structural inspections to keep the aircraft safely flying, and increased use of simulators to satisfy training requirements. In Fiscal

Year 2011, a systems sustainment and modernization budget of \$74.5 million is requested to continue to address a multitude of mission essential efforts to replace obsolete components, integrate open architecture technology, and leverage commonality.

The Navy will continue to closely manage the service life of the P-3C as the Maritime Patrol Reconnaissance Aviation forces transition to the P-8A Poseidon. Until force levels recover, allocations of aircraft must be balanced to meet mission and minimum training while preserving remaining P-3 service life. Currently, P-3Cs are meeting Combatant Commander allocations for deployed aircraft.

EP-3 Aries Replacement/Sustainment

The EP-3E continues to be a high demand ISR asset in current OCO. In Fiscal Year 2011, the President's Budget request is \$90.3 million in APN to address EP-3E Signals Intelligence (SIGINT) and communications obsolescence. This APN request supports the LRIP buy for communications intelligence (COMINT) modifications necessary to pace the evolving threat. The EP-3E program continues to modify aircraft with multi-intelligence capability to meet emergent classified requirements. Modifications are necessary to keep the platform viable until the replacement platform can be fielded.

Navy removed funding for EP-X in PR-11 and terminated the program, based on the high cost in the Program Objective Memorandum (POM) Fiscal Year 2010 acquisition strategy. Navy and OSD realize the critical capability gaps that exist with legacy systems/sensors, which led to OSD direction to conduct an Analysis of Alternatives (AoA) for this future airborne ISR capability. AoA results are due in April 2010 in order to inform POM-12 decisions on how this necessary and comprehensive ISR capability can be met using either a single material solution or multiple solutions (system of systems). Navy will develop an achievable acquisition strategy to procure known and affordable technology to satisfy future requirements.

As stated in the Administration's proposed FY11 budget, "Once the Department completes its review, the most efficient and cost effective program for replacing the current surveillance aircraft, the EP-3, can be selected." In the interim, Navy will continue to replace obsolete equipment with mission-critical sensor improvements on board the EP-3 to support US and coalition forces currently engaged in OCO. As a result, the current EP-3 fleet will be capable of performing its mission beyond 2020 while the replacement capability is developed and fielded.

MH-60R and MH-60S

The Fiscal Year 2011 President's Budget requests \$1.059 billion for 24 MH-60R aircraft including advanced procurement for 24 Fiscal Year 2012 aircraft, and \$55.8 million in RDT&E, N for continued replacement of the Light Airborne Multi-Purpose System (LAMPS) MK III SH-60B and carrier-based SH-60F helicopters with the MH-60R. The \$55.8 million is to continue development of the Ku-band data link, automatic radar periscope detection and discrimination (ARPDD) program, which is a fleet-driven capability upgrade to the APS-147 Radar, and Mode V interrogation capability in its identification friend-or-foe (IFF) system. The MH-60R is used in both anti-submarine warfare (ASW) with its dipping sonar, sonobuoys and torpedoes and in

the surface warfare (SUW) role with its electronics surveillance measures system, multimode radar with inverse synthetic aperture radar (ISAR), FLIR system and Hellfire missiles. It has demonstrated three to seven times the capability in the ASW role and significant increases in its SUW capability over legacy systems. The MH-60R program is post-milestone III, having received approval for FRP in 2006. The first operational squadron, HSM-71, returned from a successful deployment in Carrier Strike Group aboard the USS JOHN C STENNIS (CVN 74) in July 2009. There are currently three operational Carrier Air Wing Squadrons and two fleet replacement squadrons operating the MH-60R. Two additional operational squadrons will transition or standup by the end of Fiscal Year 2011.

The Fiscal Year 2011 President's Budget requests \$548.7 million in APN for 18 MH-60S aircraft including advanced procurement for 18 Fiscal Year 2012 aircraft and \$38.9 million in RDT&E, N funds for the MH-60S to continue development of the Organic Airborne Mine Countermeasures (OAMCM) (Block II) and the Armed Helicopter (Block III) missions. The MH-60S is the Navy's primary combat support helicopter designed to support Carrier and Expeditionary Strike Groups. It will replace four legacy platforms with one H-60 variant. The basic MH-60S reached IOC and FRP in 2002. Armed helicopter configuration reached IOC in June 2007 and OAMCM is scheduled to reach IOC in Fiscal Year 2011. HSC-8 completed its first carrier deployment with Carrier Strike Group aboard the USS JOHN C STENNIS (CVN 74) from January to July 2009. HSC-9 operated eight helicopters, including six aircraft in the armed helicopter configuration which includes the Multi-spectral Targeting System (MTS) FLIR, Link-16, self defense equipment, two 50 caliber crew-served weapons and eight Hellfire missiles.

The Army and Navy are executing a joint platform multiyear contract that includes both the MH-60R and MH-60S airframes along with the Army's UH-60M. The Navy is also executing a multiyear contract for integration of mission systems into the MH-60R.

LIGHT ATTACK AND UTILITY AIRCRAFT

UH-1Y Venom/AH-1Z Viper

The H-1 Upgrades Program is replacing the Marine Corps' UH-1N and AH-1W helicopters with state-of-the-art UH-1Y and AH-1Z aircraft. The legacy aircraft have proven enormously effective over decades of heavy use, and as these aircraft reach the end of their service lives we look forward to expanding utility and attack helicopter capabilities. The new Yankee and Zulu aircraft are fielded with integrated glass cockpits, world-class sensors and advanced helmet-mounted sight and display systems. The future growth plan includes a digitally-aided Close Air Support (CAS) system designed to tie these airframes, their sensors and their weapons systems together with ground combat forces and fixed-wing aircraft. Low-cost weapons systems currently in development, such as the Advanced Precision Kill Weapon System II (APKWS II), will provide lethality while reducing collateral damage.

The Fiscal Year 2011 Budget requests \$60 million in RDT&E, N for continued product improvements and \$827 million in APN for 31 H-1 Upgrades aircraft (18 UH-1Y, 10 baseline AH-1Z and three AH-1Z OCO aircraft). The program is a key modernization effort designed to

resolve existing safety deficiencies, enhance operational effectiveness, and extend the service life of both aircraft. Additionally, the 84 percent commonality between the AH-1Z and UH-1Y will significantly reduce lifecycle costs and logistical footprint, while increasing the maintainability and deployability of both aircraft. The program will provide the Marine Corps with 123 UH-1Y and 226 AH-1Z helicopter models through a combination of remanufacturing and new production. This represents an increase of 69 aircraft above the previous inventory objective of 280 aircraft. The revised objective was driven by the need to increase our active-duty Marine Light Attack Helicopter squadrons (HMLAs) from six to nine as part of the Marine Corps' directed increase in force structure and manning. This increase in active-duty HMLA squadrons started in Fiscal Year 2009 and will conclude with the stand-up of HMLA-567 in Fiscal Year 2011.

The UH-1Y Venom aircraft achieved IOC in August 2008 and FRP in September 2008. The UH-1Y program was given priority status in order to replace the under-powered UH-1N fleet as quickly as possible. AH-1Z testing and LRIP continues, with an operational evaluation (OT-II3C) starting later this month. The AH-1Z Viper's FRP decision is scheduled for the first quarter of Fiscal Year 2011. 58 AH-1Zs will be built new to support the increased inventory objective, which exceeds the quantity of existing AH-1W airframes available for remanufacture. As of March 2, 2010, a total of 33 aircraft (25 UH-1Ys and eight AH-1Zs) have been delivered to the Fleet Marine Force, and an additional 36 aircraft are on contract and in production. To date, all Fiscal Year 2009 and 2010 aircraft deliveries have been 30 days or more ahead of contract date and the program has not shown any significant impacts from the summer 2009 labor strike at Bell Helicopter.

In 2009, the Marine Corps successfully executed the first UH-1Y shipboard deployment, with three UH-1Ys deployed with the 13th MEU. During this deployment, those three aircraft flew over 600 flight hours and posted mission capable rates in excess of 76 percent, while supporting a variety of maritime special-purpose force missions to include the rescue of Captain Phillips of the Maersk Alabama from the Somali pirates.

The second UH-1Y deployment, with nine of these aircraft deployed into combat in Afghanistan, began in November 2009. In the first three months of that second deployment, HMLA-367 posted UH-1Y mission capable rates in excess of 77 percent while flying an average of 40 flight hours per aircraft per month. This is more than twice the planned utilization rate of 18.9 hours per aircraft per month. In just three months those aircraft lifted over 800 passengers and 15,000 pounds of cargo and responded to more than 650 calls from ground forces for assault support and offensive air support. The crews flying these new aircraft have not missed a single assigned launch to date and played a critical role in providing troop and cargo transport, command and control, aerial and armed reconnaissance, armed escort, and close air support during Operation COBRA'S ANGER in the Now Zad valley of Helmand Province.

ASSAULT SUPPORT AIRCRAFT

CH-46E Sea Knight

The FY 2011 Budget requests \$17.7 million for CH-46 sustainment targeted at replacing worn equipment and aircraft components that will ensure the health and viability of the airframe as we progress through the transition to the MV-22B Osprey. Our medium lift evolution to the MV-22B is progressing on schedule, with 50 percent of our medium lift fleet having begun or successfully completed the transition. The CH-46E continues to perform well and is prepared to maintain operational relevance through its projected retirement in 2018.

V-22B Osprey

The Fiscal Year 2011 President's Budget request includes \$2.7 billion for procurement of 35 V-22s and for continued development of follow-on block upgrades. Fiscal Year 2011 is the fourth year of the V-22 multiyear procurement contract. Our multiyear procurement strategy supports a continued cost reduction and affordability trend, provides a stable basis for industry, and best supports the needs of the warfighter. The Fiscal Year 2011 appropriations will fully fund Lot 15 and procure long-lead items for Lot 16 under the V-22 multiyear contract. Over the past 12 months, Bell-Boeing has continued to consistently perform better than required on production contracts, delivering aircraft on or ahead of schedule. The USMC continues to field and transition aircraft on time.

The MV-22B Osprey is now combat tested and forward deployed supporting combat operations and responding to contingencies around the world. As our premier medium lift assault support platform, the Osprey brings unprecedented range, speed and survivability to the warfighter, in a platform that far exceeds the capabilities of the CH-46E it is replacing. The MV-22B has been continuously supporting our Marines, in combat and in contingencies, since October 2007. During three consecutive squadron deployments in support of Operation IRAQI FREEDOM (OIF) (FY08-09) Osprey squadrons logged over 9,000 flight hours, carried over 40,000 passengers, and lifted over two million pounds of cargo while flying every mission profile assigned by the Multi-National Force-West Commander. The MV-22B also completed its first shipboard deployment as part of a Marine Expeditionary Unit (MEU) last November, capping its six-month deployment by flying 510 nautical miles from USS BATAAN (LHD-5) to Camp Bastion, Afghanistan. The shipboard squadron conducted a relief in place with another squadron to begin support of OEF.

The Osprey continues to redefine the speed and range at which the MAGTF commander can influence his operational area. The second MV-22B shipboard deployment is currently underway supporting humanitarian relief efforts in Haiti and follow-on presence in the U.S. Central Command area of operations. The CV-22 program has conducted multiple SOCOM deployments, including a successful trans-Atlantic operational deployment in support of operations in Africa and at locations in CENTCOM.

As we continue to explore the tremendous capabilities of tilt-rotor aircraft, we are learning valuable lessons with respect to readiness and operating costs. As of December 2009, the V-22

had exceeded 70,000 total flight hours. More flight hours have been flown on this aircraft in the last two years than in the previous 18 years combined. Like other types of aircraft in the early operational phase of their lifecycles, the MV-22 has experienced lower-than-desired reliability of some components and therefore higher operations and support costs. Despite our readiness challenges, the MV-22 squadron in Afghanistan continues to meet mission tasking through hard work and aggressive sparing. We are meeting mission, but only at supply, maintenance, and operating costs that are inconsistent with our expeditionary nature and cost conscious culture.

Fleet wide, our Block B combat deployable aircraft averaged approximately 60 percent mission capable (MC) in Continental United States (CONUS) for 2009. With focused logistical support provided to our deployed aircraft, however, we average nearly seven of ten aircraft available on a daily basis in Afghanistan. This compares favorably with the 71.6 percent availability over 18 months of operations in Iraq, and 71.0 percent availability for aircraft in the 22nd MEU. With the cooperation and support of our industry partners, we are tackling these issues head on, with aggressive logistics and support plans that will increase the durability and availability of the parts needed to raise reliability and concurrently lower operating costs of this aircraft.

V-22 capability is being increased and fielded over time via a block upgrade acquisition strategy. MV-22B Block A aircraft are now used predominantly in training squadrons. 61 MV-22B Block B aircraft have been fielded with our operational squadrons and more will continue to be delivered under the current MYP. MV-22B Block C aircraft will provide additional mission enhancements, primarily in the areas of environmental control systems upgrades, weather radar, and mission systems improvements. The targeted delivery for Block C aircraft is Lot 14, in Fiscal Year 2012.

CH-53K Heavy Lift Replacement Program

In Fiscal Year 2011 the President's Budget requests \$577 million RDT&E,N to continue SDD of the CH-53K. In the past year, the CH-53K program closed out its Preliminary Design Review (PDR), has begun producing long-lead items in preparation for building test articles under the SDD contract, and is scheduled to conduct Critical Design Review (CDR) in July 2010. In Fiscal Year 2011, the program transitions to assembly of the static and fatigue test articles and of the Ground Test Vehicle and continues developmental test activities.

During FY 2009, the program encountered a schedule delay (and associated growth to program cost due to the delay), driven primarily by an overly aggressive initial program schedule. It is important to note that these delays were not driven by technical issues, and the program remains on a sound technical footing as it enters CDR later this year. Additionally, the program has corrected the planning issues that caused those delays and is now maintaining cost and schedule performance. This program is not in danger of breaching Nunn-McCurdy thresholds. The requested funds will permit an orderly restructuring of the program leading to IOC in FY 2018.

The new build CH-53K will replace the current legacy fleet of CH-53D and CH-53E helicopters with an aircraft that provides the performance necessary to support our future warfighting requirements. The CH-53D Sea Stallion and CH-53E Super Stallion provide unparalleled combat heavy lift to the MAGTF and are among the Marine Corps most-stressed aviation

communities. CH-53s, providing vital lift of heavy equipment, supplies and troops, are currently deployed in Afghanistan, the Horn of Africa and Haiti, and are flying with MEU. Since ramping up operations in Afghanistan in May 2009, these aircraft have flown nearly 11,000 hours, carried more than 62,000 passengers, and moved over 10 million pounds of cargo in support of coalition forces in Afghanistan and the Horn of Africa, while flying well above their programmed rates in austere, expeditionary conditions.

To keep these platforms viable until the CH-53K enters service, the Fiscal Year 2011 Budget requests \$62.1 million for both near and mid-term enhancements, including the Force XXI Battle Command Brigade and Below, Integrated Mechanical Diagnostic System, T-64 Engine Reliability Improvement Program kits and Directed Infrared Countermeasures. While these aircraft are achieving unprecedented operational milestones, they are nearing the end of their service life; the CH-53E is approaching 30 years of service and the CH-53D has been operational for almost 40 years.

Ultimately, these aircraft will be incapable of supporting the Marine Corps' future warfighting concepts and will be replaced by the CH-53K. The new-build CH-53K will fulfill land and sea based heavy-lift requirements not resident in any of today's platforms, and contribute directly to the increased agility, lethality, and presence of joint task forces and MAGTF. The CH-53K will transport 27,000 pounds of external cargo out to a range of 110 nautical miles, nearly tripling the CH-53E's lift capability under similar environmental conditions while fitting under the same shipboard footprint. The CH-53K will also provide unparalleled lift capability under high altitude, hot weather conditions similar to those found in Afghanistan, thereby greatly expanding the commander's operational reach.

Maintainability and reliability enhancements of the CH-53K will decrease recurring operating costs significantly, and will improve aircraft efficiency and operational effectiveness over the current CH-53E. Additionally, survivability and force protection enhancements will increase protection dramatically, for both aircrew and passengers, thereby broadening the depth and breadth of heavy lift operational support to the Joint Task Force (JTF) and MAGTF commander. Expeditionary heavy-lift capabilities will continue to be critical to successful land- and sea-based operations in future anti-access, area-denial environments, enabling seabasing and the joint operating concepts of force application and focused logistics.

EXECUTIVE SUPPORT AIRCRAFT

VH-71 / VXX Presidential Helicopter Replacement Aircraft

The Fiscal Year 2011 President's Budget includes \$94.7 million for the settlement of the VH-71 termination, and \$65.1 million for continuing efforts on VXX, the follow-on program for presidential helicopters.

Receipt of the VH-71 termination proposal is anticipated late in Fiscal Year 2010 with negotiations and the anticipated settlement expected in Fiscal Year 2011. The Navy is currently working closely with DCMA in a complex effort to disposition all the assets acquired as part of the VH-71 Program cancellation. The majority of VH-71 specific tooling has been sold back to

Agusta-Westland in Europe. The process to disposition non-aviation related assets is well underway in the United States, and is beginning in Europe. The Navy has begun preliminary negotiations with various operators of the EH-101 and other Federal entities concerning disposition of VH-71 aircraft and parts.

VXX activity will include continuing effort that began in Fiscal Year 2010, specifically the Analysis of Alternatives (AoA), capability based assessments, CONOPS development, trade study analysis, specification development, system concept development and threat analysis leading to a successful Milestone A decision. Following Milestone A and beginning the Technology Development Phase, remaining Fiscal Year 2011 activities will focus on the proposed material solutions, specifically, reducing technology risk by determining and maturing the appropriate set of technologies and demonstrating technology on prototypes.

The VXX AoA will address all feasible options with a holistic assessment of requirements, capabilities, cost drivers, schedule implications, and risks. The requirement for a replacement Presidential Helicopter was validated by the Joint Requirements Oversight Council; however, the details and specifications on how the requirement will be safely and affordably met have not been finalized. As a first step in the process to determine how best to satisfy the need to transport the President, data will be analyzed and matured by the government study team into executable alternatives. This AoA process is underway and will support the development of an acquisition strategy, at which time cost/capability trades will be made.

VH-3D/VH-60N Executive Helicopters Series

The Fiscal Year 2011 Budget requests an investment of \$43.4 million to continue programs that will ensure the aging legacy Presidential fleet remains viable until its replacement is fielded. Ongoing efforts include the Cockpit Upgrade Program (CUP) for the VH-60N and Communications Suite Upgrade (CSU), Structural Enhancement Program (SEP), and Obsolescence Management Program (OMP) for both the VH-3D and VH-60N. Current service life extension analyses for both VH-3 and VH-60 fleets are underway with results expected in early FY 2011. The Trainer Conversion Program will start in Fiscal Year 2011 and will reduce training usage significantly on our VH-3D and VH-60N national assets. Future investments in the legacy fleet will be required to ensure continued safe and reliable executive transportation until the replacement aircraft is fielded.

WEAPONS

Joint Standoff Weapon (JSOW)

The Fiscal Year 2011 President's Budget requests \$12.6 million for continued JSOW-C-1 developmental activity and \$131.1 million for production for 333 All-Up Rounds. While these much needed procurements will help meet the fleet's weapons loadout requirements, JSOW continues to remain below approved non-nuclear ordnance requirements. Development of the JSOW-C-1 variant adds a moving maritime target capability to the highly successful baseline JSOW-C, and adds a data link and guidance software improvements. The combat-proven JSOW family of weapons procurement continues on cost and schedule.

Small Diameter Bomb II (SDB II)

The Fiscal Year 2011 President's Budget requests \$44.1 million of RDT&E for the continued development of this joint DoN/Department of the Air Force program. SDB II provides an adverse weather, day or night standoff capability against mobile, moving, and fixed targets, and enables target prosecution while minimizing collateral damage. SDB II is of special interest to the DoN, as it will be integrated into the internal carriage of both the Navy (F-35C) and Marine Corps (F-35B) variants of the JSF. SDB II acquisition consists of a competitive development risk reduction phase between two industry teams, with a down-select at Milestone B planned for the second quarter Fiscal Year 2010.

Direct Attack Moving Target Capability (DAMTC)

The Fiscal Year 2011 President's Budget requests \$21.7 million for the completion of production acceptance testing and an initial order of 700 weapons. DAMTC was originally initiated as a Fiscal Year 2007 Rapid Deployment Capability in response to an urgent requirement identified by the combatant commander overseeing operations in Iraq and Afghanistan. DAMTC improves the warfighter's ability to attack and strike moving targets by leveraging highly successful dual-mode systems.

Advanced Anti-Radiation Guided Missile (AARGM)

The Fiscal Year 2011 President's Budget requests \$7.8 million for the follow-on development and test program and \$54 million for production. The AARGM development program transforms the legacy High-speed Anti-Radiation Missile (HARM) into an affordable, lethal, and flexible time-sensitive strike weapon system. AARGM adds multi-spectral targeting capability with supersonic fly-out to destroy sophisticated enemy air defenses and expand upon the traditional anti-radiation missile target set. The program began its formal test program in Fiscal Year 2007 and was approved for LRIP in Fiscal Year 2008. Independent operational test and evaluation (IOT&E) is scheduled to begin in the third quarter of Fiscal Year 2010, with IOC on the F/A-18C Hornet in 2011.

Advanced Precision Kill Weapon System II (APKWS II)

The Fiscal Year 2011 President's Budget requests \$8.8 million of PAN,MC for procurement of 600 APKWS II Precision Guidance Kits. The DoN assumed program authority for the APKWS II on September 30, 2008. Congress appropriated funding and approved a DoN above-threshold reprogramming (ATR) request in Fiscal Year 2008 to complete APKWS II SDD. Integrated test completed in January 2010. Milestone-C is scheduled for the end of second quarter Fiscal Year 2010. IOC is planned for the second quarter of Fiscal Year 2011. APKWS II will provide an unprecedented precision guidance capability to our current unguided (and thus less accurate) rockets, improving accuracy and minimizing collateral damage. The program is on schedule and on budget to meet the needs of our warfighters in today's theaters of operations.

Joint Air-to-Ground Missile (JAGM)

The Fiscal Year 2011 President's Budget requests \$100.8 million of RDT&E to support the continued development of this critical weapons program. JAGM will become the next-generation precision-guided missile launched from Navy and Marine Corps fixed-wing, rotary-wing, and unmanned platforms. The DoN, in conjunction with the United States Army (Executive Service), received formal approval to proceed with the development of the JAGM in January 2008. JAGM is the first weapons program to be developed under the new competition and prototyping strategy, intended to improve program success rates and reduce costs. In September 2008, fixed price incentive contracts were awarded to two industry teams. During a 27-month technology development phase, these two competing contractors will carry their design through a system-level preliminary design review phase and will conduct ground launches of their prototype missiles.

Hellfire Weapon System

The Fiscal Year 2011 President's Budget requests \$109.5 million, including \$66.0 million of OCO funding, for 1,219 Hellfire all-up-round weapons. Hellfire procurements are a mix of thermobaric, blast/fragmentation, and anti-armor warheads, to provide maximum operational flexibility to our warfighters. This procurement quantity will bring the inventory total to approximately 50 percent of the requirement, and will increase our training assets. While the DoN develops the JAGM, we request continued support for legacy Hellfire weapons. Hellfire continues to be a priority weapon for current military operations as it enables our warfighters to attack targets in the caves of Afghanistan as well as to prosecute military operations in urban environments.

Sidewinder Air-to-Air Missile (AIM-9X)

The Fiscal Year 2011 President's Budget requests \$0.9 million for RDT&E efforts and \$55.2 million for production of a combined 155 all-up-rounds and captive air training missiles and missile-related hardware. The joint Navy/Air Force AIM-9X Sidewinder missile is the newest in the Sidewinder family. The Sidewinder is the only short-range infrared air-to-air missile integrated on USN/USAF strike-fighter aircraft. This fifth-generation weapon incorporates high off-boresight acquisition capability and increased seeker sensitivity through an imaging infrared focal plane array seeker with advanced guidance processing. It also uses an advanced thrust vectoring capability to achieve superior maneuverability and to increase probability of intercept of adversary aircraft.

Advanced Medium-Range Air-to-Air Missile (AMRAAM) (AIM-120)

The Fiscal Year 2011 President's Budget requests \$2.6 million for continuing RDT&E efforts and \$155.6 million for production of 101 all-up-rounds and captive air training missiles with associated missile-related hardware. AMRAAM is a joint Navy/Air Force missile that counters existing aircraft and cruise missile threats. It uses advanced electronic attack capabilities at both high and low altitudes, and can engage from beyond visual range as well as within visual range. AMRAAM provides an air-to-air first look, first shot, first kill capability, while working within a networked environment in support of the Navy's Theater Air and Missile Defense Mission Area.

Tactical Tomahawk BLK IV Cruise Missile

The Fiscal Year 2011 President's Budget requests \$300.2 million for an additional 196 BLK IV weapons and associated support. The Navy supports strongly the continued procurement of this combat-proven, deep-attack weapon in order to meet ship-fill loadouts and combat requirements.

Theater Mission Planning Center (TMPC)

The Fiscal Year 2011 President's Budget requests \$10.6 million RDT&E and \$88.7 million OPN for continued TMPC development and support. The TMPC is the mission planning segment of the Tomahawk Weapon System. TMPC develops and distributes missions for the Tomahawk Missile; provides strike planning, execution, coordination, control and reporting; and enables Maritime Component Commanders the capability to plan or to modify conventional Tomahawk Land-Attack Missile (TLAM) missions. Under the umbrella of the Tomahawk Command and Control System (TC2S), TMPC has evolved into five scalable configurations deployed at 125 sites, to include, Cruise Missile Support Activities; Tomahawk Strike Mission Planning Cells; Carrier Strike Groups, Command and Control Nodes and Labs/ Training Classrooms. TC2S Version 4.2 was released in March 2009 and has aligned Navy Tomahawk Strike and Mission Planning with existing decision-maker operational processes and support tools. Fiscal Year 2011 resources will continue the development of TC2S Versions 4.3 and 5.0 to improve joint interoperability and system usability.

UNMANNED AVIATION

RQ-4 Broad Area Maritime Surveillance (BAMS) UAS

The Fiscal Year 2011 President's Budget requests \$529.3 million RDT&E,N to continue SDD of the BAMS UAS and \$42.2 million MILCON to begin construction of Test and Evaluation facilities at NAS Patuxent River. The Milestone B decision for the BAMS UAS program was achieved on April 18, 2008. The program is on schedule and conducted the Systems Requirement Review (SRR) in January 2009, SFR in June 2009, Integrated Baseline Review in July 2009, and the Preliminary Design Review (PDR) in February 2010. The BAMS UAS program will meet the Navy requirement for a persistent ISR capability as well as providing a communication relay capability. The BAMS UAS is a larger Group-5 system which will be a force multiplier for the Fleet Commander, enhancing situational awareness of the battle-space and shortening the sensor-to-shooter kill chain. BAMS UAS will work as an adjunct to the new P-8A Multi-mission Aircraft (MMA) to provide a more affordable, effective and supportable maritime ISR option than current ISR aircraft provide. The Navy also procured two USAF Global Hawk (Block 10) UASs in Fiscal Year 2003, for demonstration purposes and to perform risk reduction activities for the BAMS UAS Program, known as the BAMS-Demonstrator (BAMS-D) program. One of the two BAMS-D UASs has been deployed to the CENTCOM theater of operations for over a year.

MQ-8 Vertical Takeoff and landing Unmanned Aerial Vehicle (VTUAV)

The Fiscal Year 2011 President's Budget requests \$10.7 million RDT&E to continue development of the MQ-8, commonly referred to as the Fire Scout UAS and \$51.0 million APN for the production of three Fire Scout MQ-8B aircraft and for initial spares. The MQ-8 Fire Scout is an autonomous vertical takeoff and landing tactical UAV (VTUAV) designed to operate from all air-capable ships, carry modular mission payloads, and operate using the Tactical Control System and Line-Of-Sight Tactical Common Data Link. The Fire Scout UAS is a medium-to-large sized Group 4 system that will provide day/night real time ISR and targeting as well as communication relay and battlefield management capabilities to support core Littoral Combat Ship (LCS) mission areas of Anti Submarine Warfare (ASW), Mine Interdiction Warfare (MIW) and Anti Surface Warfare (ASUW) for the Naval forces. The Fiscal Year 2011 RDT&E Budget request included funding to continue integrating a maritime search radar system that will significantly increase surveillance capability of the MQ-8B and support Littoral Combat System (LCS) developmental testing. While in developmental testing, the MQ-8B system is continuing a Military Utility Assessment on the USS MCINERNEY (FFG-8) in order to evolve fleet concepts for operation of the system. Deploying this system on the USS MCINERNEY has documented lessons learned that will provide valuable insight into continued development and will reduce LCS developmental and operational test risks. However, the program may not be able to complete all operational test objectives prior to the end of the USS MCINERNEY deployment. The Navy is investigating additional ship schedules to complete OPEVAL and conduct follow-on operational testing. The Fire Scout program will also continue to support integration and testing as a mission module on LCS. The Navy continues to cooperate with the Coast Guard for their ship-based UAS planning.

Unmanned Combat Air System (UCAS)

The Fiscal Year 2011 President's Budget requests \$266.4 million RDT&E for the continuation of the Navy Unmanned Combat Aircraft System (NUCAS) efforts to research a large, Group 5, carrier-suitable, long range, low observable, penetrating, persistent, unmanned aircraft system capability to conduct ISR/strike missions in denied access environments. The NUCAS efforts consist of continuation of the UCAS carrier suitability demonstration (UCAS-D), acquisition planning and associated technology development. The UCAS-D effort will mature technologies associated with unmanned carrier-suitability, including launch, recovery, and carrier controlled airspace integration, to the technology readiness levels required for a potential follow-on acquisition program. The demonstration will include catapult launch and arrested landings aboard an aircraft carrier. Additionally, the program will demonstrate autonomous aerial refueling using the same unmanned systems from the carrier suitability demonstration. The demonstrations will be complete in Fiscal Year 2013, though we expect needing additional technology maturation. Northrop Grumman, prime contractor for the UCAS carrier suitability demonstration, is on track to achieve first flight in Fiscal Year 2010.

Small Tactical Unmanned Aircraft System (STUAS)

The Fiscal Year 2011 President's Budget requests \$38.9 million in RDT&E (\$12.7 million Navy, \$26.2 million Marine Corps) and \$35.3 million in procurement (\$9.0 million APN and \$26.3

million PMC) for the STUAS program that will address Marine Corps and Navy ISR capability shortfalls identified in the OCO and currently supported by service contracts. The Group 3 UAS will provide persistent, ship- and land-based ISR support for tactical level maneuver decisions and unit level force defense/force protection. The Milestone B decision to enter engineering and manufacturing development (EMD) is scheduled for the next quarter. STUAS is currently in source selection for a contract award to coincide with the Milestone B decision. An interim Commercial Off the Shelf (COTS) solution referred to as STUAS Lite, is budgeted in Fiscal Year 2011 with \$5.4 million in RDT&E and \$14.4 million in APN. Fiscal Year 2011 PMC is planned to procure STUAS systems as an early operational capability.

Marine Corps Tactical UAS (MCTUAS)

The Fiscal Year 2011 President's Budget requests \$0.9 million RDT&E and \$18.1 million in baseline APN, as well as \$8 million in an OCO request for continued product improvement, upgrades, and retrofits. MCTUAS is the same system as the Army's RQ-7B Shadow UAS, and is a Group 3 system procured as an interim replacement for the RQ-2B Pioneer UAS until a suitable Group 4 UAS can be fielded in Fiscal Year 2016. The transition to the RQ-7B Shadow began in Fiscal Year 2007 and the Marine Corps procured its thirteenth and final system in Fiscal Year 2010. The Shadow UAS provides rapid fielding of a capability that meets urgent Marine Corps operational requirements and brings immediate interoperability and commonality between Army and Marine Corps unmanned aircraft units operating side-by-side in Afghanistan.

SUMMARY

Since 2001, the Navy and Marine Corps have been fighting shoulder to shoulder overseas, supporting an extremely high operational tempo in two theaters and in numerous contingencies while growing our force, introducing new aircraft and systems, and looking beyond the current fight to how we will shape the naval aviation structure of the future.

The Fiscal Year 2011 President's Budget reflects the Navy-Marine Corps team's solutions to the challenges we face together. The DoN's aviation programs balance sustaining fielded capabilities, as they are employed in the OCO and continued forward presence worldwide, and a substantive recapitalization effort that will deliver significantly better capabilities to the warfighter. The naval aviation team continues to work aggressively to identify efficiencies in the development, testing, procurement and sustainment of aviation platforms, components, and weapons systems in order to provide the proper tools to the fleet. USD/AT&L Dr. Carter recently testified that: "I support, as does the Secretary, the initiatives the Congress directed when it unanimously passed the Weapon Systems Acquisition Reform Act (WSARA) of 2009. Acquisition Reform is one of DoD's High Priority Performance Goals presented in the Analytic Perspectives volume of the President's Fiscal Year 2011 Budget. The Department is moving out to implement these initiatives." Our recapitalization and efficiency initiatives here are part of and consistent with WSARA implementation and DoD's Acquisition Reform goal.

We thank you again for the opportunity to testify today regarding the DoN's aviation procurement programs and look forward to your questions.