

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
SEAPOWER AND EXPEDITIONARY WARFARE
SUBCOMMITTEE

STATEMENT OF

VICE ADMIRAL DAVID ARCHITZEL, USN
PRINCIPAL MILITARY DEPUTY
RESEARCH, DEVELOPMENT AND ACQUISITION

LTGEN GEORGE J. TRAUTMAN III, USMC
DEPUTY COMMANDANT FOR AVIATION

RADM ALLEN G. MYERS, USN
DIRECTOR OF WARFARE INTEGRATION

BEFORE THE

SEAPOWER AND EXPEDITIONARY WARFARE SUBCOMMITTEE

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

DEPARTMENT OF THE NAVY'S AVIATION PROCUREMENT PROGRAM

MAY 19, 2009

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SEAPOWER AND EXPEDITIONARY WARFARE SUBCOMMITTEE

Chairman Taylor, Congressman Akin and distinguished members of the Subcommittee, thank you for providing us with this opportunity to appear before you to discuss the Department of the Navy's aviation programs. Your Navy/Marine Corps team remains engaged around the world, and naval aviation is in the fight, every day, in support of our forces in harm's way. For nearly eight years, we have been at an extraordinarily high operational tempo, and we will stay at that tempo as long as our nation requires it. Your naval service is serving honorably and well, and we are guided by our tradition and history while we keep an eye on our future. The significant accomplishments of those who serve this great Nation are a direct reflection of the tireless efforts and the consistent support of the military by this subcommittee. Thank you for your dedication, and for your oversight.

NAVAL AVIATION PROGRAMS OVERVIEW:

The Fiscal Year 2010 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 continue to work with industry in seeking ways to reduce costs such as contracting strategies on the F/A-18E/F airframe, the H-1 airframe, the F-35, the MH-60R/S, and the MV-22. As an example of our dedication to stewardship of the public's trust and funding, we are implementing a 'prototype' strategy on the Joint Air-to-Ground Missile (JAGM) to ensure high technology readiness and reduced risk prior to entering System Development and Demonstration (SDD). The Department continues the development and Low Rate Procurement of the F-35, both the B and C models, and continues the development of the E-2D Advanced Hawkeye, the EA-18G, the CH-53K Heavy Lift Replacement aircraft, Unmanned Aircraft Systems, and new strike weapons capabilities. In total, with our Fiscal Year 2010 funding, Navy/Marine Corps aviation will procure 98 additional tactical and fixed-wing aircraft, 100 rotary-wing aircraft and five VTUAV's for a total of 203 aircraft.

TACTICAL AIRCRAFT/TACTICAL AIRCRAFT SYSTEMS

F-35 Joint Strike Fighter (JSF)

The Fiscal Year 2010 President's Budget requests \$1.7 billion in RDT&E and \$4.7 billion in APN for twenty Joint Strike Fighter aircraft (sixteen F-35B and four F-35C) and associated spares. The commonality designed into the joint F-35 program will minimize acquisition and operating costs of Navy and Marine Corps tactical aircraft, and allow enhanced interoperability with our sister Service, the United States Air Force, and the eight partner nations participating in the development of this aircraft. This aircraft will give combatant commanders greater flexibility across the range of military operations. A true fifth generation aircraft, the F-35 will enhance precision strike capability through unprecedented stealth, range, sensor fusion, improved radar performance, combat identification and electronic attack capabilities compared to legacy platforms. It will also add sophisticated electronic warfare capabilities, as compared to the legacy platforms it will replace, and will tie together disparate units scattered across the battlefield, in real time. 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 over the battlefield. The F-35 will give the ESG and CSG commanders a survivable "Day-One" strike capability in a denied access environment that can not be accomplished by current legacy aircraft. The F-35B Short Take-off

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. Having these capabilities in one aircraft will provide the joint force commander and the MAGTF commander unprecedented strategic and operational agility.

The Marine Corps' tactical aviation (TACAIR) fixed-wing platforms, used for direct support to our ground combat Marines in the fight, are the AV-8B Harrier, the F/A-18 A+/C/D Hornet and the EA-6B Prowler. These aircraft are approaching the end of their planned service lives, and the Marine Corps, through careful service life extension programs, has managed these legacy platforms to bridge our aviation force until future airframes come on line. The Marines' F-35B will replace both the AV-8B and F/A-18 A+/C/D, as well as fill a large portion of the EA-6B mission as part of a networked system of systems. The Marine Corps intends to leverage the F-35B's sophisticated sensor suite and very low observable (VLO), fifth generation strike fighter capabilities, particularly in the area of data collection, to support the Marine Air Ground Task Force (MAGTF) well beyond the abilities of today's strike and EW assets.

Three SDD jets (AA-1, BF-1 and BF-2) are in flight testing. The remaining SDD jets and ground test articles, plus Low Rate Initial Production (LRIP) I and LRIP II aircraft, are in various stages of production. The SDD jets are setting new standards for quality and manufacturing efficiencies that improve with each jet. In flight testing, the initial Conventional Takeoff and Landing (CTOL) aircraft (AA-1) has demonstrated superb performance and reduced program risk, with 81 sorties (~111 flight hours) flown through April 20, 2009. BF-1, the first STOVL flight test jet, first flew in June 2008, on the schedule established two-years prior. BF-1 has flown 14 flights (~13 hours), and is currently on the hover pit, undergoing vertical engine operations. BF-2 first flew February 2009 and returned with no flight discrepancies noted. BG-1 static test results are favorable. The F135 engine has completed 11,300+ test hours on 16 engines through mid-April 2009. Software is 74% complete, with 13 million lines of code released including Block 0.5 Mission Systems, per the spiral development plan/schedule and with record-setting code-writing efficiencies. Software demonstrates stability across multiple Mission System subsystems.

Systems integration testing continues on plan via flight tests, a flying lab and over 150,000 hours of ground labs testing. A fully integrated Mission Systems jet will fly later this year. The second production lot contract was signed below the cost model prediction. LRIP III contract negotiations are near complete, and LRIP IV Advance Procurement funding is on contract. All F-35 variants are projected to meet their respective Key Performance Parameters. The F-35 plan for incremental blocks of capability balances cost, schedule and risk.

F/A-18 E/F Super Hornet

The Fiscal Year 2010 President's Budget requests \$1.1 billion in APN for nine 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. Super Hornets and legacy F/A-18A-D Hornets have conducted more than 80,000 combat missions in support of Operations IRAQI FREEDOM (OIF) and ENDURING FREEDOM (OEF) since September 11, 2001. While deployed both on the ground and at sea aboard our aircraft carriers, F/A-18's have dropped 4,600 precision ordnance Joint Direct Attack Munitions (JDAMs) and more than 19,000 laser guided munitions, and have

shot countless rounds of 20mm ammunition during strafing runs. These aircraft continue to provide vital overwatch and direct support to our troops on the ground in Iraq and Afghanistan.

The Super Hornet provides a forty percent increase in combat radius, fifty percent increase in endurance, and 25 percent increase in weapons payload over our older, legacy Hornets. Over 449 F/A-18E/Fs will have been procured through Fiscal Year 2009. The program is on track to complete procurement of the program of record of 506 aircraft by 2012. The Super Hornet has used an incremental development approach to incorporate new technologies, such as the Joint Helmet Mounted Cueing System, Advanced Targeting Forward Looking Infra-Red (ATFLIR), with shared real-time video, Shared Reconnaissance Pod System (SHARP) and Multifunctional Information Distribution System (MIDS) data-link. The APG-79 Active Electronically Scanned Array (AESA) radar system, in the Block II aircraft, has completed operational testing, achieved Full Rate Production (June 2007) and Material Support Date (December 2008). Four fully operational AESA-equipped F/A-18E/F squadrons have been transitioned and two squadrons have been deployed with full Integrated Logistics Support. The F/A-18E/F Fiscal Year 2010 Budget request also includes \$102.0 million in APN to implement commonality, maintain capabilities and improve reliability and structural safety.

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

The Fiscal Year 2010 President's Budget request is \$277.7 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 624 F/A-18A/B/C/Ds will continue to comprise half of the Navy's strike fighter inventory until 2013. Included in this request is the continued procurement of recently fielded systems such as the Joint Helmet Mounted Cueing System, Advanced Targeting FLIR, Multi-Function Information Distribution System and a Digital Communications System. The Marine Corps continues to upgrade 56 Lot 7-9 F/A-18A models and thirty Lot 10/11 F/A-18C models to a Lot 21 F/A-18C avionics aircraft capability with digital communications and a tactical data link. The Marine Corps anticipates programmed upgrades to enhance the current capabilities of the F/A-18C/D with digital communications, tactical data link and tactical reconnaissance systems. This upgrade ensures that our F/A-18s remain viable and relevant in support of Tactical Air Integration and Expeditionary Maneuver Warfare.

The Marines are planning for and expect the F/A-18(A+/C/D) to remain in the active inventory until 2023. The Marines are also employing the LITENING targeting pod on the F/A-18A+/C/D aircraft in expeditionary operations including Operation IRAQI FREEDOM (OIF) and pending employment in Operation ENDURING FREEDOM (OEF). When combined with data link hardware, the LITENING pod provides real-time video to ground forces through Remotely Operated Video Enhanced Receiver (ROVER) workstations. Continued analysis of TACAIR inventories will continue throughout 2010, in the QDR and beyond to determine the health of the legacy F/A-18A-D fleet.

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

The Fiscal Year 2010 President's Budget request is \$55.4 million in Research Development Test and Evaluation, Navy (RDT&E,N) for the completion of SDD and \$1.6 billion in APN for 22 full rate production EA-18G Lot 4 aircraft. The EA-18G continues its development as the Navy's replacement for the EA-6B AEA aircraft. The EA-18G will replace carrier-based Navy EA-6B

aircraft by 2013. A total quantity of 27 aircraft will be procured in LRIP. The Navy is using the F/A-18E/F single year procurement SYP contract to buy the Lot 4 aircraft in Fiscal Year 2010. The program began Operational Evaluation in Fall 2008. The Fleet Replacement Squadron (FRS) has achieved Ready for Training (RFT) and the first deployable EA-18G Squadron is on schedule for a August 2009 Safe For Flight, leading to Initial Operating Capability (IOC) in Fiscal Year 2009 and Full Operating Capability (FOC) in Fiscal Year 2012. The EA-18G program of record is 88 aircraft.

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

The EA-6B is in near-continuous use in Iraq and Afghanistan today in support of our troops on the ground as DoD's only tactical electronic attack aircraft performing communications jamming and information operation missions. The Program's key issue is current readiness of the EA-6B. The Fiscal Year 2010 President's Budget request is \$40.0 million in APN for procurement of critical Airborne Electronic Attack (AEA) products and continuing EA-6B readiness improvements, to increase operational availability and reduce operating cost of this low density / high-demand aircraft. EA-6B upgrades include procuring 32 Low Band Transmitters to provide a new jamming capability, replacing aging transmitters to be employed on legacy EA-6B and new EA-18G aircraft. The Budget request also provides for operational safety and cost-wise readiness improvement initiatives to ensure availability and safety of the aging EA-6B aircraft.

The Navy and Marine Corps remain fully committed to the EA-6B as we continue to enhance our legacy capabilities. The EA-6B continues to maintain an extremely high deployment tempo, supporting operations against growing and diverse irregular warfare threats. The EA-6B, when deployed to Iraq, has the highest utilization rate of any aircraft in our inventory: five times its peacetime utilization. The FY 2010 Budget requests \$11 million for EA-6B operational sustainment. Ongoing structural improvements and the planned Improved Capabilities III upgrades have extended the aircraft's service life, and will deliver increased capability through its Program of Record of 2016.

The Fiscal Year 2010 President's Budget request is \$128 million of RDT&E,N for Next Generation Jammer (NGJ) analysis of alternatives and technology maturation. The Joint Strike Fighter will leverage this remarkable asset when it comes on line. NGJ will begin competitive Technology Maturation Efforts to mature technology to system level prototypes in preparation for Engineering & Manufacturing Development Phase. NGJ will combat evolving electronic attack communication and radar targets, and will adopt an adaptable, modular, and open architecture philosophy to enable future growth.

AV-8B Harrier

The AV-8B continues to be widely deployed in support of Operation IRAQI FREEDOM and Operation ENDURING FREEDOM. Each Marine Expeditionary Unit that sails does so with embarked AV-8Bs. The Harrier recently ended a highly successful six-year rotation in Iraq, and now are in the vanguard of the Marine Expeditionary Brigade deploying into Afghanistan. We intend to make use of its weapons, sensors and basing flexibility in that austere environment.

FY 2010 Budget requests \$20.9 million RDT&E funds to support development of the AV-8 Engine Life Management Plan (ELMP)/Engine Monitoring System, Tactical Moving Map Capability, the

Readiness Management Plan (RMP), and Digital Improved Triple Ejector Racks (DITER). The DITER effort will increase the digital weapons carriage capability of the Harrier to better support combat operations. The FY 2010 budget also requests \$35.7 million procurement funding for the Open Systems Core Avionics Requirement (OSCAR), ELMP upgrades, and the RMP, which addresses aircraft obsolescence and deficiency issues associated with sustaining the current AV-8B fleet. The LITENING targeting pod also will be upgraded, to better support the Marine Corps' warfighter on the ground. When combined with data link hardware and the Rover Ground Station, the LITENING pod adds a new dimension to precision fires and to intelligence, surveillance, and reconnaissance (ISR). Finally, the AV-8B program is upgrading one day attack aircraft to a night attack configuration as part of the attrition recovery effort needed to address significant legacy inventory shortfalls until we transition to the F-35B.

Strike Fighter Trends

Our aviation plan balances aviation capabilities through cost-wise investments in recapitalization, sustainment, and modernization programs. One of the issues we will be dealing with in the Quadrennial Defense Review (QDR) process is the implications of naval inventory trends. We are updating the inputs to the predictive model and will have an updated assessment for evaluation during the QDR.

F/A-18A/B/C/D aircraft are reaching life limits and will require extensions to bridge the gap to JSF. The Service Life Assessment Program (SLAP) assessed the airframe's potential for life extension. The SLAP analytical data necessary to determine extension to 10,000 flight hours was released in May 2008. Estimated cost data to support the extension was released in November 2008. A budget quality rough order of magnitude cost for Engineering Change Proposals is in development to support the Service Life Extension Program.

A combination of addressing variables and mitigating strategies will lead to a solution for this issue. We will continue to optimize and balance our inventory while investing in the future.

FIXED-WING 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 Fiscal Year 2010 President's Budget request is \$1.162 billion for development and \$160.5 million for Advanced Procurement of the P-3 replacement aircraft, the P-8 Poseidon. Fiscal Year 2010 development funding will support the continued development of the P-8A and associated test. Fiscal Year 2010 procurement funding will support the procurement of the first six LRIP P-8A aircraft which are scheduled to begin delivery in February 2012 and advanced procurement for subsequent lots of LRIP. The program is on track for fielding in late Fiscal Year 2013 when the first squadron will have transitioned and be ready to deploy forward in support of the Combatant Commander.

The program completed the Interim Program Review in April 2009 and awarded the Advanced Acquisition Contract for Low Rate Initial Production Advanced Procurement. Boeing is currently building the fifth of eight test aircraft. These first five test articles (three flight test aircraft and two ground test articles) are on schedule for delivery in accordance with the revised plan designed to recover from the two month machinist strike that interrupted progress last fall. The first flight of

the first flight test article occurred on April 25, 2009, in Seattle, WA. The start of flight testing is on-schedule to commence in the fourth quarter of this fiscal year.

P-3C Orion

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 accumulation of two decades of heavy demand by the Combatant Commanders, to include OEF and OIF, has resulted in advanced fatigue. In Fiscal Year 2010, \$485.2 million is requested to sustain the P-3C until transition to the P-8A Multi-Mission Maritime aircraft. More than half of this amount (\$349.6 million) is for Special Structural Inspections - Kits (SSI-K), which will allow for 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 SSI-K program.

In December 2007, ongoing refinement of the model used to calculate wing stress indicated that the lower wing surface of the P-3 aircraft had fatigue beyond standards for acceptable risk resulting in the grounding of an additional 39 P-3 aircraft; four more aircraft have since been grounded, two in CY08 and two in March 2009. 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 2010, a systems sustainment and modernization budget of \$135.6 million is requested to continue to address a multitude of mission essential efforts to replace obsolete components, integrate open architecture technology, and leverage commonality.

EP-3 Aries Replacement/Sustainment

The Navy plans to recapitalize its aging EP-3E fleet with a land-based, manned, airborne Intelligence Surveillance Reconnaissance and Targeting (ISR&T) platform, called EP-X, to meet maritime requirements. In Fiscal Year 2010, the President's Budget request is \$12.0 million in RDT&E, N funds for this effort to support studies focused on capabilities, documentation, and technology development. In Fiscal Year 2010, the President's Budget request is \$46.2 million in RDT&E, N and \$92.5 million in APN to address EP-3E SIGINT sensor and communications equipment obsolescence issues that are necessary to keep the EP-3E viable until the replacement platform is fielded, and to develop follow-on capabilities that can be migrated to the EP-X. This funding supports procurement associated with obsolescence upgrades, and engineering development for JCC Spiral 3 and Recapitalization Capabilities Migration (RCM).

E-2D Advanced Hawkeye (AHE)

The E-2D Advanced Hawkeye is a critical enabler of transformational intelligence, surveillance and reconnaissance capability by providing robust overland and littoral detection and tracking of current and future aircraft and cruise missile-type targets. The E-2D Advanced Hawkeye replaces the current E-2C Hawkeye aircraft. The radar for the Advanced Hawkeye will provide enhanced capability in the overland and the littoral environment, in addition to the open ocean environment, while improving performance against clutter and small targets, adding transformational surveillance and theater air and missile defense capabilities. In Fiscal Year 2009 Congress appropriated \$385.7 million in APN-1 for two LRIP Lot I aircraft and advanced procurement for Fiscal Year 2010 LRIP Lot II aircraft. This funds one fewer aircraft than the number requested in

the FY 2009 President's Budget request and underfunds advanced procurement for Fiscal Year 2010 LRIP Lot II aircraft. An 'Operational Assessment' was completed in first quarter Fiscal Year 2009 to support a Milestone-C decision in third quarter 2009. Fiscal Year 2010 Presidents Budget requests \$364.557 million in RDT&E,N for continuation of SDD and \$606.169 million in APN-1 for two LRIP Lot II aircraft and advanced procurement for four Fiscal Year 2011 LRIP Lot III aircraft.

KC-130J Hercules

The Marine Corps' KC-130J Hercules aircraft are invaluable workhorses, deployed continuously in support of Operations IRAQI FREEDOM and ENDURING FREEDOM. These aircraft primarily provide multi-mission tactical aerial refueling, but also provide fixed-wing assault support through standard cargo and aerial delivery missions to dispersed units. Soon, these aircraft will increase their warfighting contribution with the incorporation of "Harvest Hawk," which provides support for ground forces through a roll-on/roll-off ISR/weapon system.

The recent combat introduction of the aerial-refuelable MV-22, combined with the retirement of the legacy KC-130F/R fleet last year, requires accelerated procurement of the KC-130J. The Marine Corps is programmed to procure a total of 63 KC-130J aircraft by the end of FY 2015. To date, 34 new aircraft have been delivered and thirteen more are either on contract, or in contract negotiations, for a total of 47. This is still four aircraft short of the inventory objective of 51 KC-130Js for the active force. Ultimately, the Marine Corps will seek to replace our 28 reserve component KC-130T aircraft with KC-130Js, thus necking down our aerial refueling force to a single type/model/series of aircraft.

The Navy intends to replace its aging C-130T aircraft with 25 KC-130J as the most cost effective means for addressing growing obsolescence and supportability issues.

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

The T-6 is the primary flight training aircraft for Navy and Marine Corps pilots and Naval Flight Officers, replacing the T-34C. The current requirement is for 315 aircraft, of which 162 aircraft have been procured and 52 aircraft delivered to date. The Fiscal Year 2010 President's Budget request includes \$266.5 million to procure 38 aircraft under an Air Force contract. We are also dedicated to sustainment of the TH-57, the training helicopter for Navy and Marine Corps helicopter pilots, and the T-45, the training jet for our future jet pilots and naval flight officers..

ROTARY-WING AND TILT-ROTOR AIRCRAFT

V-22 Osprey

The MV-22B Osprey is now combat-tested and ready for deployment anywhere throughout 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 supporting our Marines in combat continuously since October 2007, with the third successive squadron recently completing a highly successful seven month rotation in support of Operation IRAQI FREEDOM just last month. In Iraq, Osprey squadrons have 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.

As we continue to explore the tremendous capabilities of tilt-rotor aircraft and look forward to employing Osprey both aboard ship and in new theaters of operation, we are learning valuable lessons with respect to reliability and maintainability. 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. 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.

The Fiscal Year 2010 President's Budget request includes \$2.3 billion in APN for procurement of thirty MV-22s and continued development of follow-on block upgrades. Fiscal Year 2010 is the third year of the V-22 MYP contract. Our MYP 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 2010 appropriations will fully fund Lot 14 and procure long-lead items for Lot 15 under the V-22 multi-year contract.

V-22 capability is being increased and fielded over time via a block upgrade acquisition strategy. MV-22B Block A aircraft are now predominantly used in the training squadrons. Block B aircraft are being fielded with our operational squadrons and continue to be delivered via the current MYP. 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, Fiscal Year 2012. The CV-22 variant provides a capability that will augment the MC-130 in the Air Force/Special Operations Command inventory for special operations infiltration, extraction, and re-supply missions. CV-22 Block 0/10 is a CV-unique configuration for Special Operations Capabilities to include multi-mode radar and electronic countermeasures upgrades. CV-22 Block 20 will provide an enhanced CV-unique configuration with planned communications and aircraft system performance upgrades. The CV-22 program has completed IOT&E and a successful trans-Atlantic operational deployment in support of an exercise in Africa.

AH-1Z / UH-1Y

The H-1 Upgrades Program will replace the Marine Corps' AH-1W and UH-1N helicopters with state-of-the-art AH-1Z and UH-1Y models. The legacy fleet of AH-1W and UH-1N 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 Z and Y model aircraft will begin our process of linking the battlefield into a coherent whole. On the future battlefield, the Strikelink system will tie these airframes, their sensors and their weapons systems together with ground combat forces and fixed-wing aircraft, while weapons systems such as the Advanced Precision Kill Weapon System II (APKWS II) will provide the lethality in support our ground forces need.

The Fiscal Year 2010 Budget requests \$32.8 million in RDT&E, N for continued product improvements and \$780.4 million in APN for sixteen UH-1Y and twelve AH-1Z 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% commonality between the AH-1Z and UH-1Y will significantly reduce life-cycle costs and logistical footprint, while increasing the maintainability and deployability of both aircraft. The program will provide the Marine Corps with 226 AH-1Z helicopters and 123 UH-1Y 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 is driven by the need to increase our active duty light attack helicopter squadrons (HMLAs) from six to nine over the next several years as part of the Marine Corps' directed increase in force structure and manning.

The UH-1Y aircraft achieved initial operational capability in August 2008 and full rate production in September 2008. The first three lots of low rate production aircraft have been delivered. The final phase of OPEVAL for the UH-1Y was completed and the aircraft was deemed Operationally Effective and Suitable. AH-1Z development is continuing and the final phase of OPEVAL is scheduled to conclude in Fiscal Year 2010. We are developing the capability to fabricate new some of the AH-1Z aircraft to reduce the number of AH-1W aircraft removed from service for remanufacturing and to support the increased inventory objective which exceeds the quantity of existing AH-1W airframes. Fifty eight AH-1Zs will be built new. This covers 46 additional aircraft for increasing inventory objective and twelve aircraft to cover required routine maintenance inspection cycles along with forecasted airframe lifetime fatigue and attrition rates

MH-60R and MH-60S

The Fiscal Year 2010 President's Budget requests \$943.3 million for 24 MH-60R aircraft and \$82.0 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 \$82.0 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 the its identification friend-or-foe (IFF) system. The MH-60R is used in both the Anti-Submarine Warfare (ASW) with its dipping sonar, sonobouys and torpedoes, and the Surface Warfare (SUW) roles with its electronics surveillance measures system, multimode radar with inverse synthetic aperture radar (ISAR), forward-looking infrared (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 full-rate production in 2006. The first operational squadron, HSM-71, established in 2007, is deploying in Carrier Strike Group THREE with the USS JOHN C STENNIS (CVN 74). The MH-60R program has just finished installing its first pre-planned product improvement (P3I) set of upgrades to include Link-16 and the multi-spectral targeting system (MTS) FLIR in time to make the first deployment.

The Fiscal Year 2010 President's Budget requests \$493.0 million in APN for eighteen MH-60S aircraft and \$49.1 million in RDT&E, N funds for the MH-60S, to continue development of the Organic Airborne Mine Countermeasures (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 a new H-60 variant. The basic MH-60S reached IOC and full rate production in 2002. Armed Helo

configuration reached IOC in June 2007 and AMCM is scheduled to reach IOC in FY 2010. The MH-60S Armed Helicopter configuration is also on its first carrier deployment with the USS STENNIS. HSC-8 is currently operating eight helicopters, including six aircraft in the Armed Helo configuration, adding the MTS Targeting FLIR, Link-16, Self Defense Equipment, two 50 cal crew served weapons and eight Hellfire Missiles.

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

CH-46E Sea Knight.

The venerable CH-46E continues to perform well, and is poised to maintain operational relevancy through its projected retirement in 2018. The FY 2010 Budget requests \$35.9 million targeted at safety enhancements in dynamic components, avionics, and aircraft survivability equipment. These will sustain the health of the airframe as the Marine Corps progresses through the transition to the MV-22 Osprey. This fleet of helicopters will be over fifty years old when they retire, yet they are still relevant, still engaged in the fight, and still the workhorse of assault support to the Marine rifleman.

CH-53K Heavy Lift Replacement Program

In Fiscal Year 2010 the President's Budget requests \$554.8 million RDT&E,N to continue SDD of the CH-53K, which will replace the Marine Corps' current heavy-lift helicopters, the CH-53E "Super Stallion" and the CH-53D "Sea Stallion." In the past year the CH-53K program conducted its Preliminary Design Review, has begun producing long-lead items in preparation for building test articles under the System Development and Demonstration Contract, and is scheduled to conduct Critical Design Review in FY 2010.

The legacy CH-53E was built for sustained shipboard operations, entered service in 1981, and continues to demonstrate its value as an expeditionary heavy-lift platform. This aging but very relevant helicopter is in high demand, making significant contributions to missions in Afghanistan, Iraq, and the Horn of Africa; and disaster relief operations around the world. Expeditionary heavy-lift capabilities will continue to be critical to successful land- and sea-based operations in future anti-access, area-denial environments, enabling sea basing and the joint operating concepts of force application and focused logistics.

As a design evolution of the CH-53E, 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 persistent presence of Joint Task Forces and Marine Air-Ground Task Forces. The CH-53K will transport 27,000 lbs 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 significantly decrease recurring operating costs, and will vastly 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 JTF Commander. Until fielding begins, we will upgrade and maintain our CH-53D and CH-53E fleet for heavy lift support to our warfighters.

VH-71 Presidential Helicopter Replacement Aircraft

The FY 2010 President's Budget recommends that the VH-71 Program be cancelled. The Department of the Navy is developing options for a follow-on program. The Fiscal Year 2010 Budget requests \$30.0 million for pre-MS A risk reduction activities, capability based assessments, CONOPS development, trade study analysis, specification development, system concept development and threat analysis leading to a late Fiscal Year 2010 / early Fiscal Year 2011 Material Development Decision (MDD) for a VH-71 follow on program. In addition, the Fiscal Year 2010 President's Budget requests \$55.2 million to address FY 2010 VH-71 cancellation costs.

VH-3D/VH-60N Sustainment

The FY2010 budget requests an investment of \$42 million to continue programs that will ensure the aging legacy Presidential fleet remains viable until its replacement is fielded. These programs include the Lift Improvement (LIP) for the VH-3D and the Cockpit Upgrade Program (CUP) and Structural Enhancement Program (SEP) for the VH-60N. Increased future investment in both aircraft will be required to ensure continued safe and reliable executive transportation until a replacement aircraft is fielded.

SURVIVABILITY, SUPPORT AND COMMAND AND CONTROL SYSTEMS

Integrated Defensive Electronic Countermeasures (IDECM)

IDECM Block 3/ALE-55 completed Initial Operational Test & Evaluation in December 2008. Based on the requirement to correct deficiencies identified during test, IDECM Block 3 Full-Rate Production (FRP) decision is now planned for Fiscal Year 2010 following verification of correction to deficiencies. Additional LRIP awards were approved for Fiscal Years 2009 and 2010. The President's Budget requests \$25.8 million in Ammunition Procurement (PANMC) for 401 ALE-55 Fiber Optic Towed Decoy Decoys (FOTDs) in Fiscal Year 2010. \$40.3 million in aircraft procurement (APN-5) is requested for the procurement of ten ALQ-214 on-board Radio Frequency jamming systems (IDECM Block 2), 53 Electronic Frequency Converters and other associated aircraft hardware for FOTD integration. IDECM Block 4 is a modification to the ALQ-214 that will enable its use on F/A-18C/D aircraft, in addition to F/A-18E/F aircraft. IDECM Block 4 will replace the obsolete ALQ-126B On Board Jammer, currently installed on F/A-18C/D aircraft. The President's Budget requests \$65.5 million in Research and Development (RDT&E) in Fiscal Year 2010 for IDECM Block 4 development and test.

Aircraft Survivability Equipment (ASE)

To prevent current technology from lagging behind the threat, science and technology are developing next-generation helicopter survivability equipment. For FY 2010, the Department of the Navy has requested \$8.8 million for continued Directed Infrared Countermeasures (DIRCM) hardware procurement and \$64.7 million for Joint Allied Threat Awareness System development to provide a state-of-the-art missile warning detection and cueing system. We will thus pace the

threat of advanced anti-aircraft systems proliferation. Funds obligated to date for DIRCM have been used for development and procurement of 64 systems, which began delivery in October 2008. The remaining unfunded portion is for an additional 83 DIRCM systems, which equates to two years of production capacity, in 2009 and 2010.

Infrared Countermeasures (IRCM)

The Navy has a multi-faceted approach to providing aircrew protection against current and next generation IR-guided MANPADs. The FY 2010 President's Budget requests \$63.7 million in RDT&E,N for the execution of the JATAS Technology Demonstration efforts.

Joint Precision Approach and Landing Systems (JPALS)

JPALS is a Global Positioning System (GPS)-based precision approach and landing system that will replace aging and obsolete aircraft landing systems with a family of systems that is more affordable and will function in more operational environments, and support all Department of Defense (DoD) land- and sea-based applications. JPALS will provide this capability by being rapidly deployable, survivable and interoperable among the U.S. Services and with U.S. allies, as well as with civil aircraft and landing facilities. JPALS will eventually support unmanned and highly automated aircraft, and will be able to operate during restricted Emission Control (EMCON) conditions. Milestone B was achieved 3rd Quarter 2008 with a subsequent Engineering and Manufacturing Development (EMD) contract awarded. The Fiscal Year 2010 President's Budget requests \$139.3 million in RDT&E,N in continued support of the EMD phase of the program.

WEAPONS

In an era of continuing global uncertainty and shifting threats, the Department of the Navy is developing and deploying air-to-air and strike weapons to enhance our warfighter's capabilities in an evolving and uncertain security environment. The naval aviation Fiscal Year 2010 President's Budget request for each new weapon or weapon system modification program is directed towards deterring potential aggressors, power-projection, sea-control, or other maritime and expeditionary warfare security objectives. Our budget provides resources for weapon systems that directly support troops deployed in the field - as well as weapon systems that will shape our plans to address potential near-peer competitors.

The Navy/Marine Corps weapons programs take into account the lessons-learned from on-going combat operations as well as the results of our research, development, and test efforts. The resulting Fiscal Year 2010 weapons budget provides for a portfolio of affordable weapons programs that is balanced between solutions to address Overseas Contingency Operations (OCO) threats and development of new military capabilities.

Tactical Tomahawk BLK IV Cruise Missile

The Navy supports the continued procurement of this combat-proven, deep-attack weapon in order to meet ship-fill loadouts and potential combat requirements. The BLK IV Tactical Tomahawk missile is in a full-rate production status and in Fiscal Year 2010 the President's Budget requests \$283.1 million for an additional 196 BLK IV weapons and associated support.

Direct Attack Moving Target Capability

In response to an urgent requirement identified by the Combatant Commander in Iraq and Afghanistan, the Department of the Navy approved a Rapid Deployment Capability (RDC) in Fiscal Year 2007 to develop the Direct Attack Moving Target Capability, known as DAMTC. DAMTC improves our ability to attack and strike moving targets by leveraging highly successful, congressionally-supported procurement of dual-mode systems. The Fiscal Year 2010 President's Budget requests \$46.4 million to transition the RDC to a formal acquisition program, support a competitive acquisition strategy, and acquire 2,099 additional weapons from a single source through competition at reduced costs.

Joint Standoff Weapon (JSOW)

The combat proven JSOW family of Joint Navy and United States Air Force air-to-ground weapons continues on cost and schedule to develop a JSOW-C-1 variant. JSOW-C-1 adds a 'moving target capability' to the highly successful baseline JSOW-C variant with the addition of a data link and guidance software improvements. The Fiscal Year 2010 President's Budget requests \$10.0 million for telemetry crypto-key modernization and continued JSOW-C-1 development and \$145.3 million for JSOW-C-1 production totaling 430 All-Up-Rounds to fill our weapons magazines that remain below approved Non-Nuclear Ordnance Requirements.

Small Diameter Bomb II (SDB II)

The Department of the Navy is partnering with the United States Air Force on the development of the Small Diameter Bomb II (SDB II) program. SDB II provides an adverse weather, day or night standoff capability against mobile, moving, and fixed targets, and also allows for target prosecution while minimizing collateral damage. SDB II is of special interest to the Department as it will be integrated into the 'internal carriage' of both Navy and Marine Corps variants of the Joint Strike Fighter. SDB II acquisition consists of a competitive development, risk reduction phase between two industry teams with a down-select at Milestone-B estimated in early Fiscal Year 2010. The Fiscal Year 2010 President's Budget requests \$43.9 million of RDT&E for the continued development of this joint program.

Joint Air-to-Ground Missile (JAGM)

JAGM will become the next-generation, forward firing precision-guided missile capable of being launched from Navy/Marine Corps fixed-wing, rotary-wing, and unmanned platforms. The Department of the Navy, in conjunction with the United States Army as the executive service, received formal approval from USD(AT&L) to proceed with the development of the Joint Air-to-Ground Missile (JAGM) in January 2008. The JAGM Request for Proposal was released in March and proposals were received in May. In September 2008, Fixed Price Incentive contracts were awarded.

During the 27-month Technology Development Phase, the two competing contractors will carry their design through a system-level Preliminary Design Review (PDR) phase and conduct prototype ground launches of their missiles. The intent behind this competitive prototyping during the Technology Development phase is to improve the probability of overall program success and reduce program costs. To support this critical development program, the Fiscal Year 2010 President's Budget requests \$81.6 million of RDT&E to implement this acquisition strategy.

Hellfire Weapon System

While the Department of the Navy develops JAGM, we are requesting continued support for legacy Hellfire weapons. Hellfire continues to be a priority weapon, providing our Navy/Marine Corps warfighters the ability to attack targets in the caves of Afghanistan as well as the urban canyons of Baghdad. The Fiscal Year 2010 President's Budget requests \$133.1 million for 1,578 weapons with a mix of thermobaric, blast/ fragmentation, and anti-armor warheads to provide the maximum operational flexibility to our warfighters.

Advanced Anti-Radiation Guided Missile (AARGM)

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 has completed all design reviews, began its formal test program in Fiscal Year 2007, was approved for Low Rate Initial Production (LRIP) in Fiscal Year 2008, and is scheduled to be deployed on the F/A-18 Hornet in 2010. The Fiscal Year 2010 President's Budget requests \$9.2 million for the development and test program and \$48 million for production.

Advanced Precision Kill Weapon System II (APKWS II)

The Department of the Navy assumed program authority for the APKWS II on September 30, 2008. Congress appropriated funding and approved an Above Threshold Reprogramming request in Fiscal Year 2008 for the Marine Corps to complete SDD. The Fiscal Year 2010 President's Budget requests \$5.0 million in RDT&E funding to complete development and testing for subsequent fielding in Fiscal Year 2011. In the past year, we saw successful transfer of the laser-guided 2.75" rocket contract from the Department of the Army to the Department of the Navy. This initiative will provide an unprecedented precision capability to our current unguided (and thus less accurate) rockets fired from attack helicopters. Congressional support in FY 2008, with both a \$6 million addition and approval of a \$13 million reprogramming request, provided the \$19 million in FY 2009 that will complete development of this critical weapon in anticipation of the procurement's beginning in 2010. The program is on schedule and on budget, and will meet the needs of our warfighters in theater right now.

Sidewinder AIM-9X Air-to-Air Missile

The joint Navy/Air Force (Navy led) AIM-9X Sidewinder missile is the newest variant in the Sidewinder family. The Sidewinder missile is the only short-range infrared air-to-air missile integrated on USN/USAF strike-fighter aircraft. This fifth generation-9X weapon incorporates high off-boresight acquisition capability and thrust vectoring to achieve superior maneuverability, and provides increased sensitivity through an imaging infrared focal plane array seeker and advanced processing. The Fiscal Year 2010 President's Budget requests \$2.3 million for RDT&E efforts, and \$56.8 million for production of 161 all-up-rounds, captive air training missiles, and associated hardware.

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

AMRAAM is a joint Navy/Air Force (Air Force led) advanced, medium range missile that counters existing aircraft and cruise missile threats with advanced electronic attack capabilities operating at high/low altitudes from both beyond visual range and within visual range. AMRAAM

provides an Air-to-Air First Look, First Shot, First Kill capability working within a networked environment in support of the Navy's Sea Power-21 Theater Air and Missile Defense Mission Area. The Fiscal Year 2010 President's Budget requests \$3.6 million for RDT&E efforts and \$145.5 million for production of a combined total of 79 all-up-rounds, captive air training missiles and associated hardware.

UNMANNED AIRCRAFT SYSTEMS (UAS)

Overseas contingency operations continue to emphasize UAS. The Fiscal Year 2010 Budget reflects our commitment to a focused array of UAS that will support targeting and fires as well as enhance intelligence, reconnaissance, and surveillance missions with persistent, distributed, and netted sensors. The naval services have recently adopted the joint categorization of UAS into distinct groups that identify systems by weight, speed, and altitude. In addition to the five Programs of Record noted below, a number of small, specialized systems in the Group-1 and 2 categories are being supported to meet the urgent needs of the warfighter (i.e. Gasoline Micro Air Vehicle (G-MAV), Raven-B, WASP III Micro-UAS, and Scan-Eagle).

Marine Corps Tactical UAS (MCTUAS)

The Army's RQ-7B Shadow UAS 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 FY 2015. The Fiscal Year 2010 President's Budget requests \$1 million RDT&E and \$56.8 million APN for continued product improvement and procurement of the RQ-7B. The transition to the RQ-7B Shadow began in Fiscal Year 2007 with the procurement of two systems and was augmented in Fiscal Year 2008 with the procurement of nine Shadow systems (five baseline systems and four GWOT-funded systems). The Marine Corps will procure thirteen systems. 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 units operating side by side in Iraq and Afghanistan.

UAS/Small Tactical Unmanned Air Systems (STUAS)

The Fiscal Year 2010 President's Budget requests \$37.4 million in RDT&E (\$18.6 million Navy, \$18.8 million Marine Corps, with a \$6.0 million Fiscal Year 2010 OCO request pending) and \$13.8 million in PMC for the UAS/ STUAS program that will address Marine Corps and Navy targeting and ISR capability shortfalls identified in the OCO and currently supported by costly service contracts. The Group-3 UAS will provide persistent, ship and land-based targeting and 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 fourth quarter of Fiscal Year 2009 with Initial Operating Capability (IOC) planned in 2012. UAS/ STUAS plans to begin Source Selection 4th Qtr Fiscal Year 2009 for a contract award to coincide with the Milestone B decision. Fiscal Year 2010 PMC is planned to procure a STUAS/Tier II system as an early operational capability, which consists of four air vehicles and two ground control stations.

Broad Area Maritime Surveillance (BAMS) UAS

The Fiscal Year 2010 President's Budget requests \$465.8 million RDT&E,N to continue System Development and Demonstration (SDD) of the BAMS UAS. The Milestone B decision for the BAMS UAS program occurred on April 18, 2008. The program conducted the first major design review, Systems Requirements Review (SRR), in January 2009. The BAMS UAS program will meet the Navy requirement for a persistent intelligence, surveillance and reconnaissance (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 Air Force Global Hawk UASs in FY 2003 for demonstration purposes and to perform risk reduction activities for the BAMS Program. One of the two Global Hawk UAS, renamed the BAMS-demonstrator (BAMS-D) has been recently deployed to the CENTCOM theater of operations.

Fire Scout UAS

The Fiscal Year 2010 President's Budget requests \$25.6 million RDT&E to continue development of the Fire Scout UAS and \$77.6 million APN for the production of five Fire Scout MQ-8B aircraft and three ship control stations. The Fire Scout is a 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 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 mission areas of ASW, MIW and ASUW for the Naval forces. The Fiscal Year 2010 RDT&E Budget request included funding to integrate a maritime search radar system that will significantly increase surveillance capability of the MQ-8B. Due to delays in the Littoral Combat System (LCS) Program, the Department is certifying the MQ-8B system on the FFG-8 USS MCINERNEY in order to meet Fleet requirements to deploy this capability, as planned, in Fiscal Year 2009. An Above Threshold Reprogramming request for \$22.8 million to the Fiscal Year 2008 RDT&E Budget was approved by Congress to support the Fire Scout FFG integration. The Fire Scout Program will continue to support integration and testing as a mission module on LCS. Deploying this capability in Fiscal Year 2010 on the USS MCINERNEY will provide much needed new capability to operating forces and also reduce LCS Developmental and Operational Test risks. Developmental testing of Fire Scout with the USS MCINERNEY is in process. The Navy continues to cooperate with the Army on their Class IV UAS and with the Coast Guard for their ship based UAS planning. The Navy and Army have achieved over ninety percent commonality in the Fire Scout air vehicle.

Unmanned Combat Air System (UCAS)

The Fiscal Year 2010 President's Budget requests \$311.2 million of RDT&E budget to continue the Navy Unmanned Combat Aircraft System (Navy UCAS) efforts to develop 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 Navy UCAS efforts consist of continuation of the UCAS carrier suitability demonstration (UCAS-D) along with the initiation of 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 (TRL) 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 FY 2013 though additional technology maturation will be required before entering a potential follow-on acquisition program. Northrop-Grumman, prime contractor for the UCAS carrier suitability demonstration, is currently on track for an early Fiscal Year 2010 first flight.

SUMMARY

The Fiscal Year 2010 President's Budget reflects considerable effort in identifying solutions to the challenges faced in the Department's aviation programs through a balance between sustaining fielded capabilities, as they are employed in the Overseas Contingency Operations (OCO) and continued forward presence worldwide, and a substantive recapitalization effort that will deliver significantly better capabilities to the war fighter. The naval aviation team continues to work aggressively to identify efficiencies in the development, testing, procurement and sustainment of platforms, components, and weapons systems in order to ensure that investments made result in quality products and services provided to the fleet. Since 2001, the Navy and Marine Corps have been fighting shoulder to shoulder overseas, supporting an extremely high operational tempo in two theaters 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.

In closing, Mr. Chairman, we thank you for the opportunity to testify before your Subcommittee regarding the Department of the Navy's aviation procurement programs. We look forward to your questions.