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HOUSE ARMED SERVICES COMMITTEE  
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES  
U.S. HOUSE OF REPRESENTATIVES

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE  
HOUSE ARMED SERVICES COMMITTEE  
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES  
U.S. HOUSE OF REPRESENTATIVES

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SUBJECT: Fiscal Year 2015 Department of Defense Tactical Aircraft Programs

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## **I. Introduction**

Chairman Turner, Ranking Member Sanchez and distinguished members of the Airland Subcommittee, thank you for the opportunity to provide an update on the United States Air Force's Force Structure and Modernization. Effectively balancing our scarce budget resources across readiness, modernization, and force structure accounts is arguably now more important than ever before.

The United States Air Force is the most globally engaged air force on the planet. Whether dropping bombs, commanding satellites in space, delivering humanitarian relief, or protecting the homeland with an array of air, space, and cyberspace capabilities, American Airmen are in constant defense of our national interests. Alongside its Sister Services, the Air Force delivers the power, influence, agility, and global reach no other country currently possesses. But 24 years of continual combat operations, coupled with constrained and unstable budgets, has taken its toll. America needs a force ready for a spectrum of operations more global and complex than ever before. Instead, a relentless operations tempo, with fewer resources to fund, coordinate, and execute training and exercises, has left a force proficient in only those portions of the mission necessary for current operations. While the Fiscal Year 2016 President's Budget (FY16 PB) takes a critical step toward recovery, we remain stressed to deliver what the Nation asks of our Air Force.

## **II. Current Environment**

After more than two decades of nonstop combat operations, dominant trends point to a complex future that will challenge the Air Force in new and demanding ways. Adversaries are emerging in all shapes and sizes, and the pace of technological and societal change is increasing—with a corresponding increase in the demand for airpower. Furthermore, we cannot buy our way out of this one; we realize that it is time for the Air Force to think differently. Accordingly, senior Air Force leaders have developed a single, integrated strategy to guide the way our service organizes, trains, and equips the force to conduct future operations. Our strategy

points the way forward and does not limit us to an intractable view of the future. It is actionable, with clear goals and vectors for implementation, assessment, and revision. A strategy-driven, resource-informed plan that emphasizes strategic agility will enable the Air Force to meet twenty-first century defense challenges.

The Air Force's new strategic framework will guide us as we move forward. Last summer, we released the Air Force's strategic vision in America's Air Force: A Call to the Future. We are about to release the USAF Strategic Master Plan (SMP), which translates the conceptual strategy in A Call to the Future into comprehensive guidance, goals, and objectives. Together these documents will drive the Strategy, Planning, and Programming Process that will arm and empower the Air Force, in collaboration with our partners, to defeat adversaries and defend the nation and our allies in a complex future. An upcoming Air Force Future Operating Concept will further illuminate this strategy by broadly depicting how an agile, inclusive, and innovative Air Force should employ capabilities in the future.

Understanding that we cannot "see" into the future, four emerging trends provide a strategic context for the strategy. The Air Force will need to win in complex battlespaces characterized by: rapidly changing technological breakthroughs, geopolitical instability, a wide range of operating environments, and an increasingly important and vulnerable global commons. These trends will shape the operational environment, and highlight the broader strategic issues for national defense.

The Air Force will be proactive in meeting these challenges. As A Call to the Future states, "We must commit to changing those things that stand between us and our ability to rapidly adapt." Faster adaptation and response—what we call strategic agility—will sustain the Air Force's unique contributions that are critical to the nation. Agility is the counterweight to the uncertainty of the future and its associated rate of change. We will take significant, measurable steps to enhance our ability to wield innovative concepts and advanced capabilities in unfamiliar, dynamic situations.

By embracing strategic agility, the Air Force will be able to move past the twentieth century's industrial-era processes and paradigms and be ready for the globally connected, information-based world of the coming decades. This approach requires an inclusive Air Force culture that fosters diversity of thought and inculcates a multi-domain mindset to solve challenges that span across traditional Air Force mission sets. We will become more agile in the

ways we cultivate and educate Airmen and in how we develop and acquire capabilities. Our operational training, employment, organizational structures, and personnel interactions will also become more agile to suit the dynamic security environment.

The soon-to-be released Strategic Master Plan (SMP) describes what we will do to implement strategic agility. It translates strategic vision into action by providing authoritative direction for service-wide planning and prioritization. The SMP includes four annexes—“Human Capital,” “Strategic Posture,” “Capabilities,” and “Science and Technology”—that provide more specific guidance and direction, further aligning the SMP’s goals and objectives to future resource decisions. An ambitious and far-reaching undertaking, the base SMP will be updated every two years, with the annexes reviewed annually, to ensure a consistent and relevant connection between today’s realities and tomorrow’s potential. Certain sections will remain classified to ensure critical elements of the future force stay linked to the overall strategy.

The Air Force strategy and the SMP provide authoritative guidance to planners across the Air Staff and major commands. These planners will align their supporting plans with the goals and objectives of the SMP as they apply their expertise to inform planning and resourcing. The guidance and direction in the SMP are designed to enable better enterprise-wide solutions to challenges and close the gaps that can form in execution. In this more robust strategy-driven environment, commanders and staffs will have proper direction and the necessary authority to reach goals by working discrete but connected actions—epitomizing the balance of centralized control with decentralized execution.

This summer, the Air Force will release a new Air Force Future Operating Concept that will further inform strategic planning by describing how we will use future Air Force forces to accomplish our five core missions across the range of military operations. A natural companion to the SMP, this document will provide an innovative portrayal of how an agile, multi-domain Air Force will operate in 20 years’ time. It will describe future integrated operations in terms of broad capabilities and the key competencies we desire in future Airmen, and explain how these capabilities and competencies will address anticipated challenges in the future environment. The concept will depict a desired future Air Force that is the product of two decades of successful evolution in strategy-informed planning and resourcing; furthermore, it will serve as a baseline for continued concept development, experimentation, and refinement.

Because strategy is not prescient, it must be adaptive as it seeks to balance the present with the future. There are no easy choices, and there is no time to lose—but the Air Force must make the right prioritization decisions now in order to be prepared to respond in the face of uncertainty. Our strategy-driven, resource-informed approach will enable us to achieve the strategic agility we need to meet twenty-first century defense challenges in a complex world.

### **III. Operations Update**

The Air Force flies and fights in air, space, and cyberspace—globally and reliably—as a valued member of our Joint and Coalition teams. Approximately 205,000 Total Force Airmen are “committed in place” supporting daily Combatant Command (COCOM) operations to defend the homeland, provide command and control of our nuclear forces, operate remotely piloted aircraft, provide rapid global mobility, and many other requirements. Approximately 23,000 Airmen are deployed across the globe, including more than 16,000 in the U.S. Central Command Area of Responsibility. The Air Force is an active partner in Department of Defense planning that will shift our emphasis from today’s wars to a broader range of challenges and opportunities. The Department of Defense is currently reassessing the strategic guidance issued last year, but we anticipate continued emphasis on and planning for a rebalance to the Asia Pacific region. Our challenge is to provide those who deploy in support of our global commitments an Air Force that is capable, agile, flexible, ready, and technologically advanced.

During 2014, Air Force aircraft flew over 87,000 sorties in support of Overseas Contingency Operations (OCO). On the home front, Air Force fighter, air refueling, and early warning aircraft have flown over 67,000 total sorties supporting Operation Noble Eagle since September 11, 2001. As a testament to the capability of our Total Force, the Air National Guard and Air Force Reserve have flown more than 65 percent of these sorties.

Today, the Air Force is actively engaged in two major efforts; providing training and operational support to strengthen the Afghan Security Forces and Afghan Air Force in Afghanistan as part of Operation Freedom Sentinel (OFS) and the United Nations’ International Security Assistance Force (ISAF) Resolute Support mission, and conducting operations against the Islamic State (ISIL) in Iraq and Syria as part of Operation Inherent Resolve (OIR).

Our objectives as part of OFS are a Counter-Terrorism (CT) mission against the remnants of al-Qaeda and the NATO Resolute Support Train, Advise, and Assist (TAA) mission in support of Afghan security forces. The CT and TAA efforts are concurrent and complementary. While the U.S. and Afghan forces continue to attack the remnants of al-Qaeda, we are also building the Afghan National Defense & Security Forces (ANDSF) so that they can secure the Afghan people and contribute to stability throughout the region. Both of these efforts will contribute to a more secure and productive Afghanistan and prevent the re-emergence of terrorist safe havens.

The U.S. Air Force has helped develop the Afghan Special Mission Wing (SMW), which provides the Afghan Special Security Forces (ASSF) with the operational reach and manned Intelligence, Surveillance, Reconnaissance (ISR) capability to support counter terrorism and counter narcotics missions. The SMW is now executing long-range, full-mission profiles in low illumination. Working together with the ASSF, the commando units and SMW are consistently running unilateral direct action missions against insurgent leaders and facilitators.

The ISAF Resolute Support mission provides training, advice and assistance in eight key areas: multi-year budgeting; transparency, accountability and oversight; civilian oversight of the Afghan Security Institutions; force generation; force sustainment; strategy and policy planning, resourcing and execution; intelligence; and strategic communications. U.S. Air Force advisors work to develop the Afghan Air Force across their entire air enterprise—from fixed and rotary wing operations and maintenance, to engineering and logistics, to force development and helping them build a budget. The Afghan Air Force operates the Mi-17 transport helicopter, Mi-35 attack helicopter, Cessna 208B basic trainer and light lift aircraft, MD-530 light attack helicopter and the C-130 medium lift Hercules. Additional efforts are underway to include the A-29 Super Tucano light air support fighter, with future Afghan pilots currently in training in the U.S. In the last year, the Afghan Air Force has taken over much of the mission, providing casualty evacuation and aerial attack in support of Afghan ground forces and are providing the majority of helicopter and much of the fixed wing maintenance.

Our objectives as part of OIR are to support Iraqi and Kurdish forces on the ground as they take the fight to ISIL and to disrupt ISIL's use of Syria as a safe haven and degrade its

ability to sustain itself via resupply, finance, and command and control. U.S. Airpower has already achieved positive effects in Iraq and Syria. By virtue of the pressure we're putting on ISIL from the air, we've changed their tactics and the way they communicate: they've dispersed, they're hiding among the population more, and they aren't as free to operate as they once were. In Iraq and Kobani, Syria, airstrikes and resupply efforts have helped Iraqi and Kurdish forces to retake and hold key territory, although the situation on the ground remains dynamic. In Syria, airstrikes have attacked ISIL command and control (ex: headquarters buildings), logistics (training camps & vehicle staging areas), and revenue sources (modular oil refineries), making it harder for ISIL to sustain itself as a fighting force.

The U.S. Air Force takes great care in everything from our intelligence collection and analysis to our choice of weapons used for targeting to minimize the chance of harming civilians. No other military in the world takes the responsibility to protect civilians more seriously than we do. In addition, the U.S. Air Force has alleviated civilian suffering in Iraq through delivery of 131,000 meals, 58,000 gallons of water, and other vital supplies via airdrops in the vicinity of Mt. Sinjar and Amirli—and, more importantly, by providing advice and training that have enabled the Iraqi air force to continue independent humanitarian relief and operational resupply efforts.

Despite differences, the U.S. and our International Coalition partners are united over the long term against the common threat posed by ISIL. More than a dozen nations are supporting air operations against ISIL, where they are responsible for more than 20 percent of all sorties and more than 15 percent of all strikes. More than 40 nations have expressed willingness to participate in the effort against ISIL, and more than 30 nations have indicated their readiness to offer military support. All 22 nations of the Arab League have adopted a resolution calling for comprehensive measures to combat ISIL.

Despite these successes, we recognize there are limits to what U.S. Airpower can accomplish. Airstrikes alone will not achieve our full military objectives. The forces that matter most are indigenous ground forces. We have an Iraq-first strategy: air operations in Syria help shape conditions in Iraq. This is going to be a long, difficult struggle that requires strategic patience.





## **IV. Force Structure and Modernization**

### **Fighters**

Air Force fighter force structure is dependent on both fighter aircraft and rated manning. Four years ago, the Air Force determined through extensive analysis that a force structure of 1,200 primary mission aircraft and 2,000 total aircraft was required to execute the National Military Strategy with increased operational risk. Three years ago, based on the 2012 Defense Strategic Guidance (DSG) and fiscal constraints, the Air Force rebalanced our force structure across core functions. Analysis showed the Air Force could decrease fighter force structure by approximately 100 aircraft with higher risk, resulting in the current fighter requirement of 1,100 primary mission aircraft and 1,900 total aircraft. The 2014 Quadrennial Defense Review (QDR) Report also advances an updated national defense strategy that embodies and builds on the DSG priorities. The Chairman's assessment of the QDR strategy states we will continue to need capabilities that can operate effectively in contested environments. During the build of the FY15 budget, fiscal constraints led to a plan for force structure divestments of 334 fighters, leaving a fighter force structure significantly below the 1,900 total aircraft requirement. Fiscal pressures continue to drive these tough choices—balancing today's needs against tomorrows—and accepting near-term risk today to be ready and viable tomorrow.

The Air Force's fighter fleet is approaching 30 years old on average—the oldest in our history. Without service life extensions and capability upgrades, it will not be possible to manage risk. The Air Force is pursuing programs that will modernize and extend the service life of our remaining fleet. The F-35 is a key component in preserving future force structure and mitigating risk. Any further delay in the F-35 program will create a serious shortfall (mid and far-term) in fighter capabilities and force structure. The Air Force is very concerned with recent budget reductions and continues to monitor how these cuts will affect risk. Air Force modernization of legacy systems was traded to pay for readiness and continue to fund our top three investments. It is absolutely critical that selected fourth generation sustainment and modernization efforts continue, the F-22 continues to modernize, and the F-35 matures and begins Full Rate Production (FRP) to avoid further increases in risk.

Manning our current force is a challenge we continually work. Air Force mission success depends on efficient management of our rated force, the most challenging of which is fighter force structure manning. The Air Force is currently 581 fighter pilots short of the total manning requirement and our projections indicate this deficit will decrease to approximately 450 by 2022. The shortfall evolved from force structure reductions that cut active duty fighter squadrons and fighter training squadrons to a number that cannot sustain billet requirements. As a result, the Air Force is currently unable to produce and experience the required number of fighter pilots across the total force. The Air Force is prioritizing overall available rated manpower to fill our operational cockpits, at significant risk to institutional requirements. Projected impacts include reductions in air-operations expertise during the development of war plans and a gradual erosion of fighter pilot experience in test and training. Recent programming and policy actions raised production and absorption capacities, but current fiscal constraints place the implementation of these actions at risk. In addition, the Air Force created the non-rated 13L Air Liaison Officer (ALO) career field that reduces fighter pilot requirements in the ALO function. However, even with these changes, the Air Force is only able to slow the decline in fighter pilot inventory and will be incapable of meeting our overall requirement for fighter pilot expertise for the foreseeable future. Without these fighter pilots, the Air Force will be very challenged to continue to provide the air supremacy upon which all our other forces depend.

## **A-10**

Beginning in FY16, the Air Force will start to retire the entire A-10 fleet of 283 aircraft, saving approximately \$4.2B (\$4.7B including cost avoidance). The FY16 budget does not fund future modernization efforts for A-10 aircraft; however, we will continue to sustain the aircraft and keep it operationally viable until 2019. While the A-10 was a steady, stellar performer in recent conflicts, our current force structure is simply unaffordable in today's fiscal environment. Additionally, the A-10 cannot survive or operate effectively in a highly contested environment where there are more advanced aircraft or air defenses. Other weapon systems, from multi-role fighters to B-1 bombers to remotely piloted aircraft, demonstrated in Iraq and Afghanistan that they can provide effective close air support. These decisions, however, do come with certain risks and potential impacts to the mission. One of the impacts to using other platforms for Close Air Support (CAS) is that use of these platforms for CAS must be balanced with their other

missions, putting stress on the force in certain scenarios. Divesting the entire fleet enables us to harvest savings we could then apply to efforts that allow us to be ready and viable tomorrow.

## **F-16**

Our primary multi-role fighter aircraft, the F-16 comprises 50 percent of our fighter fleet. The FY16 budget request invests \$1.0B across the Future Years Defense Plan (FYDP) for F-16 modernization and service life extension to meet critical warfighter needs to 2025 and beyond. The majority of efforts in the FYDP focus on Legacy Service Life Extension Program (SLEP), Operational Flight Program (OFP) enhancement, upgrades to the Modular Mission Computer (MMC) and Programmable Display Generator (PDG), and upgrades to the Multifunctional Information Distribution System (MIDS).

Legacy SLEP will extend the airframe structural service life for 300 aircraft by approximately 25 percent from the current 8,000 hours to 10,000+ hours, adding about eight to ten years. The FY16 budget request continues design and development of structural modification kits for the Block 40-52 fleet to be responsive to the Air Force's total fighter requirement. The FY16 budget request for OFP enhancement will continue the integration of new weapons, avionics and improved targeting pods. The MMC and PDG upgrade will resolve processor, memory, and bandwidth issues that will allow capability growth through future OFP development. The MIDS upgrades will improve operational Link 16 reliability while also incorporating frequency remapping, crypto upgrades and growth capability.

## **F-15 C/D**

The FY16 budget request retains 17 of the 51 F-15C/Ds divested in the FY15 budget request to ensure Air National Guard squadrons retain sufficient aircraft to perform their missions. The FY16 budget request invests approximately \$1.7B across the FYDP on modernization and sustainment programs for the F-15C/D fleet. We project the F-15C/D fleet will remain viable until at least 2040, with potential for an airframe service life extension following full-scale fatigue testing. This test is underway and will conclude in 2016. The Air Force manages the fleet through scheduled field and depot inspections under an individual aircraft tracking program.

We continue to modernize our F-15C/D fleet with Active Electronically Scanned Array (AESA) radars, a more capable aircraft mission computer, an infrared frequency targeting sensor, a more robust and powerful data link, and a new electronic warfare (EW) self-protection suite, the Eagle Passive/Active Warning Survivability System (EPAWSS). This EW system will be absolutely crucial to ensuring the F-15C/D is able to operate into the future, especially in contested environments. We expect these efforts to enable 196 F-15C aircraft to operate safely and effectively through at least 2040 as determined by the full-scale fatigue test.

### **F-15E**

The FY16 budget request invests approximately \$2.2B across the FYDP for F-15E modernization and sustainment programs. This request includes integrating the latest precision weapons to hit targets accurately with reduced collateral damage, and adding a more robust and powerful data link to ensure the aircraft can accurately and securely be assigned targets when in support of ground units. Finally, we are adding a state-of-the-art AESA radar system with advanced capabilities to identify and engage targets, a more capable aircraft mission computer, and an improved self-protection electronic warfare system (EPAWSS). As with the F-15C/D, the EPAWSS system will be absolutely crucial to ensuring the F-15E is able to operate into the future in contested environments. The Air Force expects the F-15E to be an integral part of the Nation's force through at least 2040. A full-scale fatigue test, due to be complete in 2018, will provide data regarding the feasibility of a service life extension.

### **Fifth Generation Fighters**

Fifth generation fighters like the F-22A and F-35 are vital elements of our nation's defense and deterrent capability. These advanced, state-of-the-art aircraft are absolutely essential to maintain our current global air superiority that permits air, sea, and ground forces freedom of action. Each aircraft possess exclusive, complimentary, and indispensable capabilities that provide synergistic effects across the spectrum of conflict. While our potential adversaries continue to modernize, our legacy fourth generation aircraft are rapidly approaching the end of their effective service lives and are limited in their capability to operate in a highly contested environment. Our Air Force must rapidly re-capitalize our fourth generation aircraft. At the same time, we must sustain and modernize our fifth generation fleet in order to maintain

our ability to execute our National Defense Strategy in the near to mid-term while looking even further into the future at further modernization efforts that ensure continued dominance of American Airpower.

## **F-22**

The F-22 Raptor is the only operational U.S. fighter currently capable of operating in highly contested environments. F-22 attributes of stealth, super cruise, integrated avionics and sensors combine to deliver the Raptor's unique operational capability. F-22 modernization is required to counter advancing threats that specifically target F-22 capabilities. Focused on maintaining operational superiority against the evolving threat, the FY16 budget request for F-22 modernization includes \$403.2M in RDT&E and \$202.4M in procurement. Increment 3.1 delivers advanced air-ground capabilities including Synthetic Aperture Radar (SAR) ground mapping, threat geolocation, and Small Diameter Bomb (SDB) I carriage. Increments 3.2A and 3.2B remain on track for fielding in 2015 and 2018 respectively, and will deliver advanced electronic protection and combat identification, AIM-120D and AIM-9X missile capability, and significantly-improved ground threat geolocation.

The F-22 is operating safely worldwide. It has been 36 months since the last unknown-cause hypoxia-like event occurred. Notably, the retrofit of the Automatic Back-up Oxygen System is on track for completion in 2015.

## **F-35**

During FY16, the Air Force will continue to manage risk across the global precision attack portfolio by prioritizing investment in fifth-generation aircraft while sustaining legacy platforms as a bridge to the F-35 Joint Strike Fighter. The aforementioned legacy fighter modifications are intended to keep a viable air superiority fleet in operation as the F-35 program works toward Initial Operational Capability (IOC) in 2016.

The multi-role F-35A is the centerpiece of the Air Force's future fighter precision attack capability, and it is of vital importance to our nation's security, forming the backbone of U.S. air combat superiority for decades to come. In addition to complementing the F-22's world class air superiority capabilities, the F-35A is designed to penetrate air defenses and deliver a wide range

of precision munitions. This modern, fifth-generation aircraft brings the added benefit of increased allied interoperability and cost-sharing across Services and eight partner nations. The FY16 budget request includes \$6.7B for continued development and procurement of 44 F-35A, conventional take-off and landing (CTOL) aircraft.

The F-35 program reached several training milestones in 2014. May 28, 2014 marked delivery of the 26th and final F-35A CTOL to Eglin AFB, making the 58th Fighter Squadron the first complete Air Force F-35 unit. Earlier in the year, the Pilot Training Center at Luke AFB received its first F-35A, and through the end of 2014, Luke's inventory included 17 U.S. F-35A aircraft. On 24 Jul 14, AU-1, Australia's first F-35A rolled off Lockheed Martin's Fort Worth assembly line. AU-2 was delivered in late 2014, joining AU-1 in the inventory at Luke. On Aug 7, 2014, the inaugural F-35A Crew Chief Mission Ready Airman class graduated nine airmen, paving the way for thousands of future F-35 maintainers.

Like every developmental program over the past 50 years, the F-35 program has made discoveries during test and development that have been and continue to be addressed and corrected. This is to be expected, and the Air Force remains confident in the program, as it continues to make solid and steady progress toward fielding the required capabilities to meet the Air Force's IOC criteria in 2016. In May 14, the test team completed an AIM-120 weapons delivery accuracy test that was the first live fire Advanced Medium Range Air-to-Air Missile (AMRAAM) mission for the F-35B Short Take-off, Vertical Landing (STOVL) and the first dual AIM-120 launch for any variant. Also in May, the program completed its first test missions with Block 3i software, a critical step for Air Force IOC. In late summer 2014, the first F-35A night CAS tests occurred at the National Training Center at Fort Irwin. A Joint Terminal Attack Controller (JTAC) used a laser designator to interact with the F-35 electro-optical targeting system, and the JTAC communicated with the F-35 pilots via electronic and voice messaging systems, successfully identifying ground targets. This successful demonstration of CAS capability was a major step toward IOC. To close out 2014, the test team successfully conducted multiple Joint Direct Attack Munitions (JDAM) and AMRAAM weapons delivery accuracy tests and accomplished multiple SDB I weapons releases during a single delivery pass, a first for the program.

While the program achieved substantial development and test progress in 2014, the test program experienced delays due to an engine anomaly at Eglin AFB in June. Throughout the summer and into the fall, the Joint Program Office (JPO), Service System Commands and industry worked diligently to analyze the problem, prioritize test assets and return to flying status in a safe, methodical fashion. The program was subsequently able to determine root cause and developed an interim solution: a “pre-trenched” rub material that will be implemented in the field later this year. Pratt and Whitney has agreed to cover the costs for the repairs to engines in the field and the cut-in of the solution to the production line, while the program office will pay for the design activity as per the development contract. The program continues its work on a long-term fix to the engine and expects to review and select from the design solutions this spring, followed by design and qualification testing, and finally, incorporation of the solution into the production line. This work is expected to be completed in 2015.

Today, the program is on the road to initial operational capability (IOC) for the Air Force, and we expect the warfighter to be able to declare IOC as planned in 2016. Flight test for Block 2B is nearing completion and is underway for Block 3i, formal training operations at Luke AFB are set to begin in May, and first aircraft arrival is projected for Hill AFB in August. The first two F-35A aircraft are in place at Nellis AFB to support tactics development for the warfighter, and we project over 25 more F-35A aircraft to deliver through the end of 2015, including the first deliveries for our Norwegian and Italian partners. Going forward, we will continue to closely monitor progress toward IOC, including completion of development and flight test for Block 2B/3i, final resolution to the engine issue, and continued maturation of Autonomic Logistics Information System, a system that is critical to F-35 operations at home and abroad. The Air Force will also continue to watch progress for Block 3F (full warfighting capability), currently projected to complete 4-6 months later than planned. In FY16, the Air Force plans to procure 44 F-35A CTOL aircraft. Sequestration did not affect Air Force procurement quantities in 2015. Affordability remains a major priority, and the F-35 program continues to make great strides on this front. The price of F-35s continues to decline steadily Lot after Lot. For example, the price of a Lot 7 F-35A was 4.3 percent less than a Lot 6 F-35A aircraft and a Lot 8 F-35A aircraft was 3.6 percent less than a Lot 7 F-35A, including the engine and profit for both contractors. Reductions are expected to continue into the future, leveraging

the program's on-going affordability initiatives. By 2019, the expected price of an F-35A, with an engine and including profit, is expected to be between \$80 and \$85 million, in 2019 dollars.

### **Air-to-Surface Weapons**

All three mission areas (Stand-Off, Direct Attack, and Penetrator munitions) in the Air-to-Surface munitions inventory are short of inventory objectives. Joint Air-to-Surface Standoff Missile (JASSM) and SDB weapons along with Low Observable platforms are force multipliers in a highly contested environment and their shortage could increase friendly force attrition driving a much higher level of effort enabling the attack of other critical targets. The shortage of penetrator weapons will result in some inability to target adversary critical capabilities and increase risk. Combat operations and support for our coalition partners in Iraq and Syria are reducing the direct attack munitions (JDAM) inventories faster than we are procuring them. These combat operations are expected to continue long term (3+ years). Combat expenditures have been replaced using OCO funding; however replenishment takes over three years. Direct attack munition shortages drive the use of non-preferred munitions with decreased effectiveness and resulting in increased time and Air Force attrition to accomplish COCOM objectives.

### **JASSM and JASSM-ER**

JASSM and JASSM-ER (Extended Range) are currently the nation's only stealthy, conventional, precision, launch-and-leave, standoff missiles capable of fighter and bomber aircraft employment. They are capable of penetrating next generation enemy air defenses to strike high value, hardened, fixed, or mobile targets. The JASSM (baseline) has a range greater than 200nm while the JASSM-ER has a range greater than 500nm.

The JASSM (baseline) weapon is in FRP; the 12th production contracts was awarded to Lockheed Martin on December 19, 2013, for 150 missiles. About 1,360 missiles have been delivered; about 230 of these are undergoing warranty repair, for surface wrinkling due to exposure to high humidity conditions. A new coating (starting at lot 8) has corrected the surface wrinkling problem. FY16 is the last JASSM (baseline) buy for a total procurement of 2,034 missiles.



JASSM-ER starts FRP in FY15, after completing 4 low-rate initial production (LRIP) lots. The 4<sup>th</sup> LRIP contract was awarded to Lockheed Martin on December 19, 2013, for a total of 60 missiles. Currently, 60 missiles have been delivered, and the Air Force declared JASSM-ER IOC on the B-1B on December 2, 2014. In FY17, the JASSM production line transitions to JASSM-ER at the most efficient rate of 360 missiles per year. The last JASSM-ER procurement is planned for FY23, for a total of 2,866 missiles.

### **SDB I and II**

The Air Force was short of the SDB I inventory objective and had ceased procurements prior to current operations. The combat operation in Iraq and Syria is the first time we have expended significant numbers of SDB I. In FY16, the Air Force plans to procure an additional 1,692 SDB I. In addition, the FY16 OCO request would replenish 63 combat expenditures.

The SDB II uses a multi-mode seeker and dual band weapon data link to attack mobile targets at stand off range. SDB II will provide a four-fold increase in load out. Its carriage system will allow initial combat forces to achieve operational objectives early in conflicts. Initially, the F-15E (Air Force threshold), F-35B & C (Department of the Navy threshold), F/A-18E/F and AC-130W will carry the SDB II.

SDB II is in Engineering, Manufacturing and Development with an LRIP decision planned by the end of this fiscal year. In FY15, SDB II will continue developmental and live fire testing and conduct government confidence test shots. The FY15 procurement funds buy 144 weapons with deliveries starting in FY16. The Air Force's total planned procurement for SDB II is 12,000 weapons.

### **Air-to-Air Weapons**

Air-to-Air missile inventories are short of objectives. AIM-120 AMRAAM and the AIM-9X continue to be in short supply. These weapons enable the joint force to achieve Air Superiority with a first look first kill capability. The shortage of Air-to-Air missiles delay achievement of Air Superiority, and will decrease the time the Joint Force can maintain Air Superiority,. Adversary capabilities continue to challenge the Joint Force's historical advantage in the air superiority arena.

## **AIM-120D AMRAAM**

The AIM-120 Advanced Medium Range Air to Air Missile (AMRAAM) is the Department of Defense's premier beyond-visual-range missile to counter existing and emerging air vehicle threats, it operates at high or low altitude with electronic attack capabilities. AMRAAM is a key enabler for gaining air superiority and air dominance for the F-15, F-16, F/A-18, F-22 and eventually F-35. It provides the ability to achieve multiple kills per engagement. The latest evolution of AMRAAM is the AIM-120D. It increases range and kinematics, improves high off-boresight targeting, and enhances two-way data link for improved accuracy and lethality at range. The Air Force is the lead service in partnership with the Navy.

The AIM-120D completed operational testing in July 2014. The Navy fielded the missile and declared IOC for the F/A-18E/F on January 7, 2015. The Air Force expects IOC in the 3QFY15. Total procurement for FY15 is 200 units. The program will continue to update the AMRAAM technical data package to ensure a viable, producible design through the production life of the AMRAAM program, and to maintain a robust supplier base for the life of the program.

## **CV-22**

The current CV-22 fleet of 43 aircraft is fully funded and provides transformational mission capability to Special Operations Forces. The Air Force executed its final buy of four aircraft in FY14, which included one congressionally added Operational Loss Replacement (OLR) aircraft. Declaration of full operational capability is scheduled to follow delivery of the last CV-22 in the first quarter of FY17, for a total of 50 operational Air Force Special Operations Command aircraft.

The V-22 Joint Program Office is executing an aggressive improvement program through block upgrade development efforts. The CV-22 program office is also focused on improving engine propulsion system reliability and overall aircraft sustainability. In FY16, development continues on the Improved Inlet Solution (IIS) to address foreign object ingestion.

In addition to these critical engine upgrades, the Air Force continues to make other improvements to the CV-22. The on-going Communication, Navigation, Surveillance/Air Traffic Management (ATM) modification will enhance navigation system accuracy and upgrade

the aircraft identification friend or foe system. The aircraft electrical power system upgrade is an FY16 new start effort to replace an obsolete component and improve the aircraft's electrical power generation and distribution system. The Air Force also continues to develop and install modifications designed to improve reliability, maintainability, safety, deployability, and mission effectiveness. Future modifications and improvements will make the CV-22 even more reliable, capable, and cost-effective.

### **Combat Rescue Helicopter (CRH)**

The Air Force is the only Service with organized, trained, and equipped to execute theater-wide Personnel Recovery. Due to the advancing age and current attrition rates of the HH-60G, the Air Force must continue to modify existing HH-60G helicopters while utilizing the Operational Loss Replacement program to meet Combatant Command requirements. The newly designated HH-60W will be specifically equipped to conduct Combat Search and Rescue across the entire spectrum of military operations. Moreover, this weapon system is called on to support the larger Personnel Recovery architecture through the execution of medical evacuation, casualty evacuation, humanitarian relief operations, non-conventional assisted recovery, humanitarian assistance, defense support of civil authorities, search and rescue, and non-conventional evacuation operations missions. This new platform will continue the legacy of rescue established by the HH-60G through.

In addition to 112 HH-60Ws, the CRH program provides for training devices, support equipment and post production support as a replacement for the HH-60G. The Air Force awarded the engineering, manufacturing, and development contract to Sikorsky Aircraft Corporation in June of 2014 with an initial obligation of \$1.28B. This program will hold a preliminary design review in FY16 and is targeting an IOC in FY21. The AF has fully funded the CRH program.

### **RQ-4 and U-2**

The decision to retain the RQ-4 while retiring the U-2 remains unchanged in the FY16 budget request. The Air Force will have less force structure, capacity, and Intelligence,

Surveillance, and Reconnaissance (ISR) support to conventional high-altitude wartime ISR requirements compared to keeping both the U-2 and RQ-4 Block 30 forces. However, the department determined that the RQ-4 Block 30 force structure is sufficient when combined with other capabilities. Some losses in ISR capability and capacity can be mitigated with upgrades to the RQ-4 over the next 5 to 10 years and by utilizing the larger ISR capability portfolio. Even with our best mitigation measures, some increased risks to combat and peacetime ISR collection remains. However, the Department is willing to accept some risks while focusing on the ISR core competencies and long term affordability.

### **Command and Control (C2)**

Command and Control, enables all other Air Force Core Functions. The Air Force's C2 strategy provides sufficiently robust, scalable, flexible, and rapidly deployable C2 capabilities, enabling commanders to fully exploit air, space and cyberspace capabilities. In the FY16 budget request, the Air Force leverages some of the sequestration relief provided by the Bipartisan Budget Act (BBA) to increase investment in C2 capabilities. Specifically the FY16 budget request supports the Air and Space Operations Center (AOC), E-8C Joint Surveillance Target Attack Radar System (JSTARS) and JSTARS Recapitalization, E-3 Airborne Early Warning and Control System (AWACS), and Three-Dimensional Expeditionary Long Range Radar (3DELRR) programs. The Air Force is requesting FY16 funds to continue modernizing the AOC, and the E-3 AWACS while recapitalizing the E-8C JSTARS mission area. In October 2014 the 3DELRR program awarded a development contract, currently in litigation, for a new ground based sensor.

### **E-8C JSTARS and JSTARS Recapitalization**

The E-8C JSTARS is the airborne Command, Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) platform for air-to-ground Battle Management operations. It provides long-endurance, all-weather, surveillance and targeting of moving and stationary targets via Ground Moving Target Indicator (GMTI) and SAR technology.

Based on the results of the Airborne SAR/MTI JSTARS Mission Area AoA in 2011, the Air Force has begun a JSTARS Recapitalization (Recap) effort. The JSTARS Recap, seeks to

replace the legacy E-8C with affordable commercially available aircraft, reducing operation and sustainment costs by 27 percent compared to the E-8C. The new platform will reduce the logistics footprint and improve operational capability with an advanced ground surveillance radar and on-board battle management suite.

JSTARS Recap will continue to provide a unique blend of on-board Battle Management Command and Control (BMC2) and ISR capabilities that enable the central tenet of Air Forces doctrine "Centralized Control and Decentralized Execution". Crews onboard the JSTARS use its wide area ground surveillance radar to build situational awareness and identify targets which are passed to strike assets or crossed cued with ISR platforms. The capability to perform this dual mission at the tactical edge provides C2 mission assurance in a contested environment.

The USAF is fully committed to the JSTARS mission. The E-8C and JSTARS Recap acquisition are fully funded in the FYDP. To ensure we continue maintaining the command and control and battlespace awareness capabilities requested by Combatant Commanders, the USAF intends to maintain the legacy E-8C fleet until the new JSTARS Recap fielding begins. JSTARS Recap is slated for IOC in FY23 and our plans are to procure a total of 16 aircraft.

### **E-3 AWACS**

The E-3 AWACS fleet is the Department of Defense's airborne surveillance and BMC2 weapon system. AWACS is a key airborne element of the TACS and provides BMC2, Battlespace Awareness (BA) and Decision Superiority (DS). As a rapidly deployable system, the E-3 is often the first surveillance and BMC2 capability in theater. Current modernization efforts focus on upgrading the battle management mission systems, combat identification and the cockpit avionics suite. These upgrades provide AWACS with the computing and communications architecture required for participation in a net-enabled battlespace, as well as avionics free from Diminishing Manufacturing Source (DMS) issues and mandated for continued worldwide airspace navigation. AWACS is also modernizing its wide-band communication capability to allow for netcentric operations and data exchange with other weapon systems and elements of the enterprise, as well as performing sensor upgrades to mitigate the effects of advanced electronic attack in contested environments.

With the implementation of the modernization programs, AWACS execute the National Military Strategy, but the platform will require future initiatives to address emerging adversarial threats and for effective participation in coalition or joint networked battlespace. Future capability enhancements will depend on the priority and phasing of funding relative to other Department of Defense efforts, and difficult choices will be required to live within the constraints.

Under the continuing fiscal constraints, the Air Force will maintain the 31 aircraft fleet and plans to reduce from 31 to 24 aircraft in FY19. This will allow the AWACS fleet to retain critical modernization programs needed for Joint Air Command and Control in highly contested environments. Additionally, evidence of increased corrosion and aging aircraft issues are becoming more prevalent, leaving the AWACS fleet struggling to consistently meet Air Combat Command's Mission Capable Requirement. To resolve the capacity shortfall created by the fleet reduction and increasing corrosion/aging aircraft issues, the Air Force is funding an AoA to consider modern and efficient solutions for the follow-on Airborne BMC2 mission.

### **Airborne Electronic Attack**

The Air Force is committed to providing airborne electronic attack capability in support of operations across all operational warfighting domains. The decision to divest half of the fleet of EC-130H COMPASS CALL's in FY16 was a tough decision driven by budgetary constraints. The remaining fleet will continue to support the current fight. The EC-130H COMPASS CALL is required by the COCOMs; the divestiture incurs and accepts the risk of nonsupport to all but the currently tasked operations. The Air Force will continue to investigate alternatives for airborne electronic attack capabilities to supplant and rebuild capacity of the existing EC-130H COMPASS CALL fleet as part of the Joint Airborne Electronic Attack Family of Systems concept.

### **Rapid Global Mobility**

The Rapid Global Mobility fleet continues to pursue capability enhancements balanced by recapitalization and required modifications to operate in international airspace and avoid diminishing manufacturing source issues. The KC-46A Pegasus tanker acquisition program is progressing and the first 18 of 179 tankers are slated for delivery in FY17. Even with this

tremendously capable addition to our tanker inventory, when measured against current strategies, the fleet will not meet moderate risk levels until the early 2020s. C-130J production is still set for 142 and, coupled with FAA and European compliance modifications planned for our C-130Hs, ensures our tactical airlift fleet is more than adequate to respond to any task established by national command authorities. The strategic airlift fleet of C-5s and C-17s is adequate to support the million ton miles per day metric established in our most stressed response scenarios.

### **Aviation Safety**

The Air Force continues to incorporate new and improved capabilities to protect our aviators and aircraft. These aviation safety technologies greatly contribute to the continuing long-term reduction of mishaps. Over the last year, mishaps have included multiple engine related mishaps, two mid-air collisions, and two bird strikes. Other mishaps are still under investigation by the Accident Investigation Boards. Historically, tactical aviation losses have commonly involved controlled flight into terrain, G induced loss of consciousness, and spatial disorientation. Recent and planned system safety improvements such as traffic collision avoidance, automatic ground collision avoidance, and automatic emergency backup oxygen systems are addressing these issues. Continued fielding of these safety technologies is essential to preventing mishaps and preserving combat capability.

### **Industrial Base**

When considered in its entirety, the nation's aerospace industrial base is a bright spot in the economy with a favorable trade balance in 2014 of \$61.2 billion. However, this success is primarily due to the commercial aircraft sector. The concerns and challenges we expressed in our testimony last year over the future of the aerospace industrial base supporting the Air Force remain. As a nation, we can no longer take for granted the widespread availability of engineering and design teams, production workers, facilities, and equipment required to meet emergent national security requirements. The observations about the capability and capacity of our Air Force made by Secretary James and General Welsh in the Air Force Posture Statement also apply to the aerospace industrial base supporting the Air Force.

As a result of the difficult budget decisions, we have given up industrial capacity to design, develop, produce, and sustain the next generation of military aerospace systems while attempting to maintain some level of capability in those areas. For the next generation of fighter and attack aircraft, the outlook for meaningful competition is guarded. It depends on the nation's ability to allocate and sustain investment sufficient to retain capability and capacity in key areas. Both the Department of Defense and the Air Force are addressing this national challenge. Leadership has invested in programs such as the Defense Department led Aerospace Innovation Initiative and the Air Force's Adaptive Engine Technology Development effort even during these times of fiscal restraint. These focused investments, while sustaining elements of the aerospace industrial base, do not fully address the national commitment required to sustain this nation's role as the global technical leader in military aerospace.

#### **IV. Conclusion**

The Air Force continues to be the world's finest across the spectrum of conflict, but the gap is closing. A return to sequestration-level funding would result in a less ready, less capable, less viable Air Force that is unable to fully execute the defense strategy. At FY15 Balanced Budget Act level funding, the Air Force has some ability to manage risk in supporting the strategy, but significant challenges will remain. In order to defeat advancing threats, the Air Force must continue investments in top recapitalization and key modernization programs, and gain and maintain full-spectrum readiness.

Our sister services and allies expect the Air Force to provide critical warfighting and enabling capabilities. We remain focused on delivering Global Vigilance, Reach and Power, through our core missions of Air Superiority, Space Superiority, Global Strike, Rapid Global Mobility, Intelligence, Surveillance and Reconnaissance and Command and Control. We look forward to working closely together as we address the challenges of near-term uncertainty and risk to provide the ability to deliver combat air power for America when and where we are needed.