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SENATE ARMED SERVICES COMMITTEE
AIRLAND SUBCOMMITTEE
UNITED STATES SENATE

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE SENATE ARMED SERVICES COMMITTEE
AIRLAND SUBCOMMITTEE
UNITED STATES SENATE

SUBJECT: Aviation Programs

STATEMENT OF: Lt Gen Donald J. Hoffman, SAF/AQ and Lt Gen Daniel J. Darnell, AF/3/5

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Senate Armed Services Committee – Airland Subcommittee

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Subject: Tactical Aviation

**Combined Statement of
Lt Gen Donald J. Hoffman (SAF/AQ)
Lt Gen Daniel J. Darnell (AF/A3/5)**

I. Introduction

Senator Lieberman, Senator Cornyn and distinguished members of the subcommittee, thank you for the opportunity to appear before you today to discuss Air Force Tactical Aviation and other matters that are important to our Air Force and the Nation.

Your Air Force is actively fighting terrorism and insurgents around the world in the Global War on Terror (GWOT), and we appreciate the Senate Armed Services Committee's continued support of our Nation's air, space, and cyberspace forces. Since the GWOT began, congressional supplemental funding each year, including the \$5.5 billion provided for FY08, ensured that your Airmen deployed in combat overseas are trained, equipped, and ready day-to-day to perform their mission. As we prepare for the next year of global operations, the Air Force is grateful for the Subcommittee's support provided through the 2008 National Defense Authorization Act, and as always, we appreciate the great lengths to which the subcommittee has gone to support Airmen, their pay, and their quality of life.

In the GWOT, we continue to fulfill our roles as Airmen for the Joint team working with our sister services to provide the desired effects to the Combatant Commanders. Simultaneously, we stand prepared for rapid response and conflict across the globe as our Nation's sword and shield. For over 17 years, the United States Air Force has been engaged in continuous combat operations providing our Nation unparalleled advantage in three war fighting domains: Air,

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space, and cyberspace. Your Airmen have maintained constant watch, deployed continuously, engaged America's adversaries directly, responded to human crises around the world, and provided the *Global Vigilance*, *Global Reach*, and *Global Power* to secure our Nation.

Your Air Force is the most battle-tested in Air Force history, and every day your Airmen find innovative ways to accomplish their mission more efficiently and effectively. Your Airmen are dedicated to the defense of this Nation and have committed themselves to go to the ends of the Earth, to the most dangerous or austere locations, in our Nation's hour of need or in the world's moment of despair. If tonight, tomorrow, or in 20 years America calls; we will go, because it is our sacred oath to provide America and its Joint team, wherever it might be engaged, the full might of air, space, and cyberspace power.

To ensure success, your Air Force is organizing, training, and equipping our Airmen for both the current and future fights, building in the flexibility to operate across the entire spectrum of conflict. It is no accident that America's Air Force has unprecedented *Global Vigilance*, *Global Reach*, and *Global Power*. We learned our lessons from our own history and others', and we invested resources and effort to establish and maintain dominance in our three warfighting domains: Air, space and cyberspace. Even after the victory in Operation DESERT STORM, the Air Force upgraded, modernized, and completely changed its training mindset and programs. The result was a flexible, responsive, and lethal force that contributed greatly to the Joint successes in Operations ALLIED FORCE (OAF), ENDURING FREEDOM (OEF), and IRAQI FREEDOM (OIF). Even with these advances, Airmen continue to find ways to improve the combat power provided to the Joint team. Your forces engaged in combat today are fully ready to perform their missions, but future dominance is at risk.

America faces a dangerous and uncertain future and our enemies do not sit idly by. Instead, adversaries – both declared and potential – are developing and fielding new and better

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means to threaten our Nation, our interests, and stability around the world. At the same time, the average age of our air and space craft continues to rise, and our ability to overcome future threats is diminishing. We also face increased operations, maintenance, and personnel costs that cut into our ability to finance future dominant capabilities. We are doing all we can to become even more efficient and effective and to defray these costs. Despite our best efforts, we face declining readiness and soaring recapitalization rates. Therefore, we have taken significant steps to self-finance a vital recapitalization and modernization effort for our aging air and space force. The Air Force must be capable of setting the conditions for America's success against emerging threats in the uncertain years that lie ahead.

II. Win Today's Fight

Our first priority is to win today's fight. Air Force GWOT missions are only the latest in a string of over 17 continuous years of combat since Operation DESERT STORM began. Throughout this period, our strategic forces have remained on constant alert. In fact, the United States Air Force has underwritten the national strategy for over 60 years by providing a credible deterrent force, and we continue to serve as the Nation's force of first and last resort, reassuring allies, dissuading competitors, and deterring adversaries by maintaining an always-ready nuclear arm.

Today, Air Force operations are on-going in Iraq, Afghanistan and the Horn of Africa (HOA). Every day, your Air Force flies over 300 sorties in Iraq and Afghanistan directly integrated with and enhancing ground operations. Since GWOT operations began, your Air Force has flown over 80% of the coalition's combat sorties in support of OIF and OEF. These missions provide the Joint and Coalition team airlift, aero-medical evacuation, air-refueling, Command and Control, close air support to ground operations, strike, Intelligence, Surveillance, and Reconnaissance (ISR), and electronic warfare. We have flown over 394,000 mobility sorties

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moving equipment and troops to and from the CENTCOM Area of Responsibility (AOR). Our intra-theater airlift missions shift convoys to the air eliminating the need to place troops and vehicles in harms way. Aero-medical evacuation missions move wounded Soldiers, Sailors, Marines, and Airmen to higher levels of medical care at hospitals as far away as the continental United States. In 2007, America's Airmen conducted nearly 1,600 precision strikes in Iraq and Afghanistan, many under the control of Joint Tactical Air Controllers. In Iraq, strikes increased by 171% over the previous year. Added to those numbers, your Air Force has flown over 50,000 sorties protecting the homeland for Operation NOBLE EAGLE.

Air Force engagement in CENTCOM is only the tip of the iceberg. Airmen operate around-the-clock and around-the-globe to provide all Combatant Commanders (COCOMs) with critical capabilities. Over 40 percent of the total force and 53 percent of the active duty force are directly engaged in or supporting COCOM operations everyday. On any given day, the Air Force has approximately 206,000 Airmen (175,000 active duty plus an additional 31,000 guard and reserve) fulfilling COCOM tasks. This includes approximately 127,000 Airmen conducting activities such as operating and controlling satellites, standing alert in our Inter-Continental Ballistic Missile (ICBM) facilities, operating unmanned aerial vehicles, launching airlift and tanker sorties, providing intelligence assessments, and many other functions critical to each of the COCOMs. There are a further 57,000 Airmen stationed OCONUS in direct support of the PACOM and EUCOM missions. Finally, a portion of the above forces plus an additional 22,000 Airman from the current AEF rotation are made available for deployments in support of other COCOM requirements.

III. Status of the Fleet

As requested by the subcommittee, the following information provides updates on USAF Tactical Aviation:

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UNCLASSIFIED**Legacy Fleet**

The Air Force fighter force is the oldest it has ever been, at an average age of more than 19 years, it is generally able to accomplish today's missions. However, all our legacy aircraft are showing signs of age. In addition, GWOT duration and operations tempo have accelerated service life consumption for numerous platforms, and the cost of keeping them in the air in terms of dollars and manpower is increasing. This sustained high operations tempo has contributed to lower readiness levels, which does not allow us to take much risk in operations and maintenance. We must sustain readiness and be able to fight today. GWOT is forcing the Air Force to maintain some legacy systems to meet the current threat.

The Air Force continues to improve fighter aircraft capability to conduct precision targeting in close coordination with our soldiers on the ground by fielding the Sniper and LITENING Advanced Targeting Pods (ATPs) with video downlink (VDL) capability. VDL-equipped pods are able to transmit streaming sensor video directly to ground forces equipped with the Remotely Operated Video Enhanced Receiver (ROVER) terminal, greatly speeding target acquisition and providing a revolutionary improvement in support to ground forces both in the traditional Close Air Support (CAS) and emerging non-traditional intelligence, surveillance, and reconnaissance (NTISR) missions. There are currently 155 Sniper and 225 Litening ATPs in the Combat Air Forces. Of those, 33 Sniper and 111 Litening are VDL equipped, and 53 of the 77 ATPs in theater have VDL.

A-10

The A-10 provides the Joint Force Commander lethal, precise, persistent, and responsive firepower for Close Air Support and Combat Search and Rescue. It has performed superbly in operations DESERT STORM, OAF, OEF and OIF. However, the age of the A-10 and high operations tempo have taken their toll on the fleet. In the Fall of 2006, the Air Force Fleet

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Viability Board (FVB) recommended that the Air Force upgrade 242 thin-skin center wing A-10 aircraft with thick-skinned center wing replacements. Additionally, A-10 landing gear failures have resulted in a program for replacing failure prone parts. In the near-term, a Service Life Extension Program (SLEP) and overhaul programs will allow us to continue flying these venerable aircraft. The Air Force is upgrading all 357 A-10s to the "C" configuration through the Precision Engagement modification. This integrates digital data links and advanced targeting pods adds color displays, pilot throttle and stick controls, and increases precision guided weapons carriage capability. Additionally, we have integrated beyond line of sight radios into the A-10 for faster communication with ground units, forward controllers, and command and control centers.

F-15 A-D

The average age of the F-15A-D fleet is over 25 years old. However, analysis suggests that Air Combat Command can manage the fleet through scheduled field/depot inspections under an Individual aircraft Tracking Program.

The F-15A-D fleet has returned to flying status after engineering analysis confirmed they are safe for flight. Of the 429 aircraft in the inventory, only 9 remain grounded due to the longeron crack. The Commander of Air Combat Command has proposed that 5 will be repaired and 4 will be retired due to their proximity to planned retirement. We anticipate that most of these aircraft will be repaired this year at a cost of approximately \$235,000 each using organic materials and labor at the Warner-Robins Air Logistics Center.

On the recommendation of Boeing and depot engineers, the Air Force has instituted recurring inspections of F-15 longerons every 400 flight hours to detect cracks before they become catastrophic. Analysis confirms that this interval is very conservative and will avoid a mishap such as the one that occurred on 2 November 2007. Additionally, the Air Force will

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conduct a full-scale fatigue test, aircraft teardown, and improved structural monitoring to help establish the maximum F-15 service life and more effectively manage structural health of the fleet. We expect these efforts to successfully enable the 177 F-15C/D “Golden Eagles” to operate safely and effectively through 2025.

F-15E

The F-15E fleet, which was not affected by the longeron crack, has an average age of over 16 years and continues to provide support for on-going operations in Afghanistan and Iraq. Like the A-10, the F-15E performed superbly in operations DESERT STORM, OAF, OEF and OIF. The Air Force has been working hard to improve the F-15E’s ability to rapidly engage and destroy time sensitive targets by adding secure radios and data links for faster communications with ground units and forward controllers; by integrating the latest precision weapons that not only accurately hit a target but are designed to reduce collateral damage; by adding a helmet mounted cueing system that will reduce the F-15E’s time to engage a target by up to 80%; and by adding a state-of-the-art radar system that not only addresses sustainment issues with the current system but will give the F-15E advanced capabilities to identify and engage targets, share real-time information with other aircraft, and protect itself from enemy threats. The Air Force plans for the F-15E to be an integral part of the Nation’s force through at least 2035.

F-16

Our F-16s, the bulk of the fighter fleet, are undergoing a structural upgrade program to replace known life-limited structural components. This upgrade program is required to achieve an airframe life of 8,000 flight hours. Wing pylon rib corrosion, a known problem with the F-16 aircraft, is an issue we monitor closely. This corrosion can prevent the F-16s from carrying pylon-mounted external fuel tanks, which limits their effective combat range. While we currently have three F-16 aircraft grounded and 13 flight restricted from carrying external tanks

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due to wing pylon rib corrosion, the corrosion problem is somewhat common across the fleet. For example, within the past 24 months, we identified 27 aircraft at Aviano Air Base, Italy with some degree of corrosion in this area. We currently inspect F-16 aircraft every 800 hours to monitor for this problem.

In other inspections, approximately 16% (63 of 399) of our Block 40/42 F-16 aircraft have been found to have bulkhead cracks. As of March 31, 2008, 18 Block 40/42 F-16 aircraft were in non-flying status awaiting bulkhead repair or replacement. An additional 42 aircraft continue to fly with increased inspection requirements to measure crack growth. We will continue to monitor this situation closely.

The Common Configuration Implementation Program (CCIP) is the top F-16 priority and will enable the maintenance of a single operational flight program configuration on both the Block-40 F-16s and Block-50 F-16s. The Block-50 modification is complete and the Block-40 modification will be complete in FY10. It combines several modifications including a new mission computer, color displays, air-to-air interrogator (Block 50/52 only), Link-16, and Joint Helmet Mounted Cueing System.

Future Fighter Shortfalls and Plans to Mitigate Shortfalls

The Air Force has been at war for 17 continuous years with operations in Southwest Asia, the Balkans, GWOT, and defending the Homeland. This extremely high operations tempo has accelerated the service life consumption for nearly all of Air Force platforms and especially the fighter force. This sustained high operations tempo has contributed to lowered readiness levels, with increasing risks to operations and maintenance.

Your Air Force aircraft are the oldest they have ever been, averaging over 24 years of age. While your Air Force remains able to carry out the missions of today, it is becoming clear that the aging of the fleet is having negative effects that are difficult to forecast. The Air Force

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faces a recapitalization challenge unlike anything before. Airman must ensure that adequate forces and the right balance of aircraft types are available to meet both the near-term and future needs of our Nation. Today's Airman must ensure that future Airmen inherit an Air Force that is relevant, capable and sustainable.

Capitalization of our fifth generation fighter force is essential to meet our commitment of securing the national defense. F-35s will not achieve full production rates until 2015 yet we are already retiring F-15s and F-16s, and will continue to do so well into the out-years. During this period of retiring aircraft before F-35 full rate production, F-22 production is capped, effectively interrupting our ability for fifth generation recapitalization until the middle of the next decade. By 2025, most of our legacy air frames will be retired. The Air Force position remains that a 2250 combat aircraft inventory is the required force. However, Airmen realize this will be a difficult challenge based on likely budget availability.

Fifth Generation Fighters

Fifth generation fighters like the F-22A and the F-35 are key elements to our Nation's defense and deterrence. As long as hostile Nations recognize the ability of U.S. airpower to strike their vital centers with impunity, all other U.S. Government efforts are enhanced, which reduces the need for military confrontation. This is the timeless paradox of deterrence; the best way to avoid war is to demonstrate to your enemies, and potential enemies, that you have the ability, the will, and the resolve to defeat them.

Both the F-22A and the F-35 represent our latest generation of fighter aircraft. We need both aircraft to maintain the margin of superiority we have come to depend upon, the margin that has granted our forces in the air and on the ground, freedom to maneuver and to attack. The F-22A and F-35 each possess unique complementary and essential capabilities that together provide the synergistic effects required to maintain that margin of superiority across the

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spectrum of conflict. The OSD-led 2006 Quadrennial Defense Review (QDR) Joint Air Dominance study underscored that our nation has a critical requirement to recapitalize tactical aircraft (TACAIR) forces. Legacy fourth generation aircraft simply cannot survive to operate and achieve the effects necessary to win in an integrated, anti-access environment.

F-22A Procurement Plans

We're proud to tell you the F-22A program has established a world class production program. The F-22A production program is currently delivering Lot 6 aircraft ahead of scheduled contract delivery dates at a rate of about two per month. Additionally, construction has started on Lot 7 Raptors, the first lot of the three-year multiyear procurement contract we awarded last summer. When the plant delivers the last aircraft of Lot 9 in December 2011, we will have completed the program of record of 183 Raptors. The Air Force supports the President's Budget and greatly appreciates the SECDEF commitment to keep the F-22A production line open through a supplemental request. Because of our economic order quantity buy under the multiyear contract, some vendors early in build process will complete deliveries and begin shutdown in November this year. As such, we are on track to release a shutdown request for proposal later this summer, and we anticipate FY09 shutdown costs to be \$40M.

On the current unfunded requirements list, we requested an additional \$600M to buy four more aircraft to replace GWOT losses of legacy aircraft. These aircraft would be dovetailed in at the end of Lot 9 and will only keep the production line open for an additional two months. If we want to keep the line open and deliver an additional F-22A Lot, then the Air Force would require \$595.6M in FY09 for Advance Procurement of 24 aircraft. In either case, we are at a critical cross-road: we must make a decision by November to avoid increased costs and a break in the production line before our suppliers begin to exit the market.

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The F-22A Raptor is the Air Force's primary air superiority fighter, providing unmatched capabilities for operational access, homeland defense, cruise missile defense, and force protection for the Joint Team. The multi-role F-22A's combination of speed, stealth, maneuverability and integrated avionics gives this remarkable aircraft the ability to gain access and survive in high threat environments. Its unparalleled ability to find, fix, track, and target enemy air and surface-based threats ensures air dominance and freedom of maneuver for all Joint forces.

The Air Force has accepted 116 F-22A aircraft to date, out of a programmed delivery of 183. Most of these aircraft include the Increment 2 upgrade, which provides the ability to employ supersonic Joint Direct Attack Munition (JDAM) and enhances the intra-flight data-link (IFDL) to provide connectivity with additional F-22As. The F-22A fleet will be upgraded under the Joint Requirements Oversight Council (JROC) approved Increment 3 upgrade designed to enhance both air-to-air and precision ground attack capability. Raptors off the production line today are wired to accept the Increment 3.1 upgrade, which when equipped, upgrades the APG-77 Active Electronically Scanned Array (AESA) radar to enable synthetic aperture radar ground mapping capability, provides the ability to self-target JDAMs using on-board sensors, and allows F-22As to carry and employ 8 small diameter bombs (SDB). Increment 3.1 is funded and begins to field in FY2010. Future F-22As will include the Increment 3.2 upgrade, which is funded and features the next generation data-link, improved SDB employment capability, improved targeting using multi-ship geo-location, automatic ground collision avoidance system (Auto GCAS), and the capability to employ our enhanced air-to-air weapons, the AIM-120D and AIM-9X. Increment 3.2 should begin to field in FY13. The Increment 3.3 upgrade is currently unfunded. It plans to include Mode 5/S, which is the next generation Identification Friend or Foe (IFF) and

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advanced air-traffic control transponder, radar auto search/auto detect, which gives automated target cueing using a fourth generation AESA radar, and a ground-moving-target-indicator-and-tracking capability.

F-35

The F-35 program will develop and deploy a family of highly common, affordable, fifth generation strike fighter aircraft meeting operational needs of the Air Force, Navy, Marine Corps, and Allies. The F-35 will provide our nation with a highly capable and affordable strike aircraft in sufficient quantities to destroy a wide array of targets in a protracted conflict. Air Force and OSD studies, such as the Sustaining Air Dominance and Joint Air Dominance studies, have demonstrated the requirement for both the air-to-surface payload and survivability of the F-35 in the face of advanced surface-to-air missile threats. Legacy fourth generation aircraft simply cannot survive to operate and achieve the effects necessary to win in an integrated, anti-access environment. Failure to recapitalize the fighter force with the F-35 will result in significantly increased risk to both our air and ground forces.

The F-35 is meeting all Key Performance Parameters, and as of March 31, 2008, the first Conventional Takeoff and Landing (CTOL) test aircraft, AA-1, has completed 39 test flights. Recently it completed its first two in-flight refueling missions, and the Cooperative Avionics Test Bed (CAT-B) continues to provide unprecedented risk reduction at this stage in a major weapon system not seen in any legacy program. Most recently, the F-35 program has received approval to award the second Low Rate Initial Production (LRIP) lot which consists of 6 CTOL aircraft, which will be awarded this spring, and 6 Short Takeoff and Vertical Landing (STOVL) aircraft, which will be awarded this summer.

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UNCLASSIFIED**Joint Strike Fighter Alternative Engine Program**

The Department continues to believe the risks associated with a single source engine supplier are manageable and do not outweigh the investment required to fund a competitive alternate engine. However, the Air Force and Navy are executing the \$480M appropriated by Congress in the 2008 budget to continue development. We completed the Critical Design Review for the alternate engine in February 2008, and we have completed over 300 hours of engine testing for the CTOL aircraft.

The cost to complete remaining F136 engine development is estimated at \$1.4B in Research, Development, Test and Evaluation through 2013. Starting in 2009, the F136 program would require approximately \$31M for long lead items in preparation for production and \$1.7B across the Future Years Defense Program beginning in FY10 for the production of the F136 engine.

IV. Closing

We are building a 21st Century Air Force prepared to succeed – strategically, operationally, and tactically. Our highly capable and lethal aviation programs provide *Global Vigilance, Global Reach, and Global Power*. These capabilities are critical today and for the future Joint force.

The United States of America depends on air, space and cyberspace power to an extent unprecedented in history. We are ready and engaged today, and looking toward securing the future. We cannot rest on the laurels of our current capability. Our Nation must invest today to ensure tomorrow's air, space and cyberspace dominance.

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