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Subject: Fiscal 2005 Defense Authorization: Tactical Weapons Systems

Testimony:

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Chairman Sessions, Ranking Member Lieberman and Members of the Subcommittee

Introduction

Thank you for this opportunity to discuss with you and your subcommittee today, the Air Force's Tactical Weapons Systems. I'm also happy to report to you in this written statement, some of the successes and outstanding efforts of your Air Force Professionals as we strive to improve the way we do business, while transitioning critical technology to warfighting capability. General Keys and I are proud to come before you today and discuss our plan for maintaining the United States Air Force as the dominant air force in the world. We seek your committee's support. Together we can achieve the mutual commitment necessary for those critical programs that ultimately deliver on the promise of warfighting capability that ensure victory when necessary.

Throughout the past year, we have made progress toward achieving my vision of a more efficient and effective acquisition process. Despite numerous challenges, we succeeded in developing new capability for, and in many instances transitioning that capability to, the joint warfighter. As I will shortly describe, my staff and I continue to seek ways to improve our

approach to the acquisition process, institutionalizing an enterprising paradigm and enjoying individual successful outcomes along the way. In this manner, we do our part in serving our Nation's defense.

We have continued to play a starring role in the Air Force core competency of turning technology into warfighting capability. The challenge, which we confidently embrace, remains doing so amidst the often-unpredictable dynamics of world events, business interests, technology maturation, and public support. And despite these challenges, I can assure you that we in the Air Force stand as committed as ever to meet those challenges of today, as well as tomorrow, and to follow the direction provided by our Secretary of Defense.

Agile Acquisition Update

During similar testimony last year, I told of a mandate given me by the Secretary and Chief of Staff of the Air Force to change the way we in Air Force Acquisition do business. Our programs have all-too-often suffered from development cost and schedule overruns, which have in turn led to fielding delays, fewer production quantities, and even reduced capability. I identified and presented several root-cause factors that I believe can lead to poor program execution and subsequently laid out a series of policies instituted to address these underlying causes. These areas included unstable requirements, lack of test community buy-in, inadequate system's engineering, unstable funding, and faulty cost estimates. By getting a handle on these problems, our intent was, and still is, to bring back stability and credibility to our modernization efforts.

The goal is simple, if difficult: deliver what we promise, when we promise. I'm pleased to report on our progress this past year in addressing the areas identified above.

Stakeholder Collaboration

During similar testimony last year, I emphasized the importance of establishing and fostering collaboration as an enabling theme in our quest to achieve “Agile Acquisition.” We believe that greater cooperation among stakeholders in defining priorities and key requirements, especially as they inform development of a capability-based acquisition strategy, is of paramount importance. For the first time ever, during the past year the Acquisition and Operations communities collaborated on simultaneous revisions to regulations governing their respective portions of the capabilities acquisition system. High Performance (Integrated Product) Teams (HPT) with members from all stakeholder organizations were formed to work on these efforts, synchronizing all the policies and making clear along the way that speed and credibility are the underpinning of what we do. The goal was simple: a seamless, collaborative process that smoothly implements the DoD 5000 series and the Joint Capabilities Integration and Development System (CJCSI 3170.01C). As might have been expected, we found that the very exercise of bringing these regulations into harmony has served to open vital lines of communications and collaboration that we expect to pay dividends in the future.

In fact, General Keys and I have jointly signed out a policy statement that further stipulates how this collaborative environment will be put into practice. System acquisition management plans and acquisition strategies will be routinely developed using the HPT process. The responsible acquisition organization will convene the same HPT that initially developed the required operational capability to subsequently generate acquisition courses of action (COA) (COAs should contain: cost, schedule, contract strategy, spiral approach, etc.). Ultimately, we will call on Major Command (MAJCOM) Commanders to commit to the COA that best

addresses warfighter needs. We expect this environment to foster a mutual understanding of what is required, and what is possible.

In January, I further operationalized the program execution end of this collaboration by instituting Capabilities Program Execution Reviews (CPER). The goal here is to provide timely information on program issues so that MAJCOM commanders can make informed decisions. During these CPERS, which will be held twice a year with each MAJCOM, we will identify program execution issues and develop corresponding options. We'll provide a proposed action and relate impacts to the master capabilities as identified in the Capabilities Review and Risk Assessment. The decision to institutionalize the CPER process was the result of positive feedback from last year's pilot sessions with Air Combat and Air Mobility Commands.

A key aspect of the collaborative environment that has already been alluded to is an overall approach to straight talk that I've dubbed, "Expectation Management." With the belief that "surprises" can be kept in check when all stakeholders maintain realistic expectations, I have directed my Program Executive Officers to identify program changes in a timely fashion, no matter what their source, communicate those changes to leadership and then drive new expectations. We can no longer allow changes in funding, requirements, or even schedule without documentation and stakeholder agreement on just what the effects on the program will be. Under the Expectation Management policy, we will no longer "just work it out later." When fact-of-life changes occur, we will honestly assess the impact, document it, and along with all stakeholders, collaboratively agree on a way ahead.

In addition to the operator-acquirer collaboration already discussed, we have also this past year fostered similar collaboration with the test community. Major General William Peck, Commander Air Force Operational Test and Evaluation Center (AFOTEC), and I have jointly

signed out a policy that calls for “Seamless Verification” of our modernization programs. Seamless Verification is designed to eliminate the seams between contractor, developer, and operational testers. It requires the warfighter, contractor, developer, and operational tester to collaboratively develop test and evaluation activities with the goal to produce efficient schedules and reduce risk of program failure. These requirements are being codified into the test community’s Capabilities Based Test and Evaluation instruction in the same fashion as was done with the acquisition and operational instructions discussed above. The Small Diameter Bomb acquisition will be a pilot program for Seamless Verification

Having turned policy into action, I expect these collaborative environments to produce real results as we execute the task of capability-based acquisition. It won’t by itself develop technology any quicker, but should reduce the risks associated with misunderstanding and unrealistic expectations.

Systems Engineering

Last year, I identified the need to re-instill an adequate systems engineering foundation within the acquisition process. Systems engineering is one of the bedrocks of acquisition management because it ensures that contractor-proposed solutions are consistent with sound engineering principles. It is all the more critical because of the Air Force-adopted spiral development approach to acquisition that incrementally delivers weapon system capability quickly and hedges technology risk. We must have the capability to smoothly proceed from one spiral effort to the next. I implemented a process to ensure Milestone Decision Authorities adequately review the proposed approach to systems engineering prior to approving Acquisition

Strategy Plans. I also demanded that system-engineering performance be linked to contract award fee or incentive fee structures.

To be clear, the system engineering approach used by the AF and our industry partners must focus on an end state that quickly delivers high-quality, best value products (capabilities) that fully meet the warfighters' need, and are designed to easily and inexpensively accommodate growth of capabilities in subsequent increments. In January of this year, I signed out Increment 2 of our new "Revitalizing Air Force and Industry Systems Engineering" policy. The intent of this latest move is to institutionalize key attributes of an acceptable system engineering approach and outcome across the combined AF/Industry enterprise. For example, we have generated appropriate language that should be included into key acquisition documents such as solicitations, award fee plan / incentive fee contracts, and other contracts. I have further directed that this language, which is intended to be an example and not boilerplate, be incorporated into governing acquisition instructions. Our hope is to see meaningful progress within the next 18 months.

Program Stability and Execution

While funding stability is an age-old problem that in many cases is beyond our control, there are measures nonetheless that we have undertaken to improve our ability to manage the instability and also ensure accountability for program execution. One way of better dealing with instability, for example, is through informed decision-making. As I've already discussed, increased collaboration, expectation management, and formal exchanges like the CPER should allow us to collectively make decisions that provide the best use of limited resources, given the

annual ebb and flow of funding profiles. Another way of handling instability more efficiently and credibly is through improved acquisition program management.

I have spent a great deal of time this past year working with the Commander of the Air Force Materiel Command, General Gregory Martin, on a plan to realign and relocate our Air Force Program Element Officers (PEO). I'm very proud to report that this plan, which is designed to clarify lines of responsibility and increase the speed and credibility in acquisition programs, is proceeding on schedule. In October of last year, we took the first major step of Phase 1 of this realignment when the PEO for weapons moved from the Pentagon to Eglin Air Force Base. Major General Robert Chedister, who is also the commander of the Air Armaments Center, is now the PEO, backed up by an acquisition execution deputy. Similar moves were subsequently made for the Aeronautical and Electronic Systems Centers at Wright-Patterson AFB, OH and Hanscom AFB, MA respectively. Phase 1 of this realignment is now complete and the PEOs are responsible for the PEO programs as well as those smaller, previously designated "Designated Acquisition Commander" programs, that have been mapped into their portfolios. There are important details still remaining to be worked, but we've already gained a lot of momentum in the right direction: improved ability to manage limited resources and improved accountability for program execution.

Assisting us in working out these details now is an overarching game plan, or Concept of Operations (CONOPS), that General Martin and I agreed to last December. This CONOPS will govern the acquisition roles and responsibilities between the Office of the Assistant Secretary of the Air Force for Acquisition and the Air Force Materiel Command. The very success of efforts such as the ones already discussed often finds itself in the details, and the agreed-to CONOPS

will go a long way toward fostering the kind of mutual support and can-do effort that will ultimately make Agile Acquisition a success.

Improved Cost Estimating

A final area that I introduced during testimony last year was the problem of faulty cost estimates. I had implemented a policy whereby acquisition programs be designed to a 90% confidence level. Since, we've convened two Integrated Product Teams (IPT) to consider how we might go about achieving that improved confidence level. Within our contracting division, we are considering how better-incentivized contractors might produce more realistic proposals. Also, in conjunction with the Air Force's Financial Management Directorate, the Government Most-Probably Cost IPT also seeks methods to establish and sustain better budgets through incentivized cost estimates. Clearly, in order to improve our credibility with the warfighter and facilitate better investment decisions, we need to produce better cost estimates up front. I look forward to receiving the results and recommendations of these IPTs in the next few months.

Leveraging Science and Technology (S&T) Investment

The Air Force remains committed to an S&T Program that enables us to achieve our vision of becoming an integrated air and space force capable of rapid and decisive global engagement. By continuing our investment in transformational technologies that support a reduced cycle-time, spiral development acquisition process, the Air Force will retain its dominance of air and space in future conflicts, against both traditional and asymmetrical threats. It is a part of the Air Force's proud legacy to be on the cutting edge of technology, and S&T programs have historically been a major contributor to its superior warfighting capability.

During this past year I entered into an agreement with the Commander, Air Force Research Laboratory (AFRL), Major General Paul Nielsen, to improve the timeliness of advanced technology transition from the laboratories into acquisition programs. Similar to the other agreements I've discussed, this one begins with new levels of collaboration and communication. It calls on the AFRL to establish a broad-based initiative to focus and accelerate its technology efforts in support of warfighting capabilities. The initiative includes a capability-based investment strategy, systems engineering, collaborative portfolio reviews, and an annual assessment of the progress and results of this initiative.

Steady investment and rapid transition will support the current preferred acquisition strategy of spiral development. Most, if not all, of the programs to be discussed below, unmanned aerial vehicles, propulsion systems, munitions, aircraft structures and materials, have all been touched by Air Force S&T. Under Agile Acquisition, the goal is to bring these technologies to warfighting success stories faster and more efficiently than ever.

Technology to Warfighting Successes (selected programs)

F/A-22

We are extremely pleased with the progress of the F/A-22 program this past year. With its revolutionary combination of stealth, supercruise (i.e., cruise above 1.5 mach without afterburner), maneuverability, and integrated avionics, the F/A-22 is living up to its promises. The advertised capability is here now--it is no longer just a test program. Our focus is clearly on providing proven capability to the Nation's warfighters soon.

One year ago, we had 16 missile shots completed. Today, after over 5,000 flight test hours there have been 47 successful missile shots (12 guided, 35 separations), and both the flight

envelope and weapons envelope are cleared for Initial Operational Test & Evaluation (IOT&E) start. The program has made tremendous strides improving avionics stability--the issues today are not the same as they were a year ago. Total system reboots no longer occur. The program incorporated full functionality required for operational test and simultaneously improved overall stability more than ten fold. The development program is now nearly complete with all necessary events to proceed into IOT&E; and we now anticipate a full-rate production decision in December 2004.

At this time last year, we had only delivered 3 production aircraft, compared to 13 to date. And while deliveries have lagged, we know much more about the manufacturing processes than we did a year ago. Experience gained with these 13 production Raptors allowed both Air Force and Lockheed-Martin production experts to complete an end-to-end production process proofing and schedule re-baseline in December 2003. The joint government and contractor team addressed leadership, manufacturing processes, tooling, and parts reliability. They identified 171 quality corrective actions, 120 tool improvements, 17 major producibility improvements, and corrective actions for 68 high failure rate parts. The time needed to implement these improvements is built into the re-baselined delivery schedule, and we are about 40% through the implementation plan. As we continue through Lot 2 and Lot 3 final assembly, we will fully realize the benefit of these improvements. We now have a credible schedule, and the Air Force is confident we will recover to schedule before Lot 4 deliveries--December 2005 Initial Operational Capability (IOC) will not be impacted.

In fact, Raptors are now operating in three locations. Ten jets assigned to Edwards Air force Base (AFB) are wrapping up developmental test and are well into operational test. At Nellis AFB, five Raptors are developing operational tactics and techniques. At Tyndall AFB

four jets, and counting, are training pilots today. Additionally, the first operational jet will arrive at Langley AFB in November of this year. Through a year of perseverance and teamwork, IOC is now clearly within visual range, and the Air Force is now postured to deliver this transformational capability as anticipated.

F-35

Acting in concert with the F/A-22 will be the F-35 Joint Strike Fighter (JSF). The F/A-22/F-35 force mix will balance affordability, capability and force structure--critical capabilities for the Global Strike concept of operations--to ensure sufficient quantities of advanced fighter aircraft to give the US dominant force across the full spectrum of conflicts.

Over the past year, the JSF program has experienced some challenges, most notably achieving weight goals, but the government-industry team has taken aggressive measures to ensure program success. In fact, the Conventional Take-off and Landing, and Carrier Variants of the aircraft are still projected to meet all of their Key Performance Parameters, while plans are already in place to ensure success with the Short Take-off and Vertical Landing variant.

In spite of these challenges, the F-35 acquisition program has also achieved several milestones during this past third year of System Development and Demonstration (SDD). These include the Air System Requirements Review, the Integrated Baseline Review, and the Air System Preliminary Design Review. In addition, the program was ahead of schedule for the First Engine To Test milestone, and we have over 200 hours of successful operating time on 2 test engines.

As the Air Force assumes responsibility for execution of the JSF program later this year, it will apply all of the appropriate Agile Acquisition initiatives to effectively address and

overcome weight issues. With all that is riding on the department's largest cooperative development program, we will deliver.

Joint Air-to-Surface Standoff Missile (JASSM)

The Joint Air-to-Surface Standoff Missile (JASSM) is a "kick down the door" type weapon to be used in the early stages of a war to neutralize enemy's defenses and war infrastructure by targeting high value, fixed and relocatable targets. Last year, there was concern among some members about JASSM's performance during test that ultimately resulted in a reduction in fiscal year 2004 production funding and direction to maintain Low Rate Initial Production (LRIP).

Since then, all JASSM test programs, both developmental and initial operational test, have been successfully completed. All issues identified during these tests have been or are being addressed. Furthermore, the Air Force is confident that all fixes have been verified in testing or will be verified with follow-on test. In fact, AFOTEC rated JASSM "Effective and Potentially Suitable," with the major issue affecting suitability being mission planning time. The introduction of a PC-based tool is in work and will reduce the mission planning time and meet requirements. As a result of this past year's success, the Air Force believes all criteria to enter full rate production have been met; however, a final decision will be made after release of the Beyond LRIP report and its subsequent receipt by Congress.

Also of note, last year witnessed the start of a JASSM-Extended Range (ER) program. JASSM-ER is a solid example of the preferred spiral development approach that delivers incremental capability to the warfighter sooner than later. JASSM-ER will increase the range capability to greater than 500 nm without changing the outer mold-line. In fact, with a contract

award in February of this year, Phase 2 is already underway, leading to ground and flight test in fiscal year 2005.

B-2 and Joint Direct Attack Munition (JDAM)

In September of 2000, the Chief of Staff of the Air Force directed the development and integration of a 500 lb JDAM capability on the B-2 Spirit using “Smart” Bomb Rack Assemblies (SBRA). The SBRA program is a key warfighting enabler that improves the B-2’s persistent precision engagement capability. It increases the B-2 guided weapon capability to 80 independently targeted, smart weapons.

Last fall, the Air Force successfully demonstrated the power-up, data transfer, launch, and impact accuracy of 80 independently targeted 500-lb JDAM munitions at the Utah Test and Training Range. In practical terms, this translates into the capability to destroy an enemy airfield in a single pass or attack up to 80 targets on a given sortie. More significantly in light of today’s testimony, is the fact that this program has exceeded performance requirements, is under budget, and on schedule to meet the Air Force Chief of Staff’s “Required Assets in Place” deadline of November 2004.

The JDAM program also reached a milestone of its own recently. During recent operations, JDAMs were being used at rates up to 3000 per month. In order to prevent exhaustion of Air Force inventories, the JDAM program was challenged to increase its production rate from a pre-September 11th rate of approximately 750 per month, all the way to 3000 kits per month. Last month, the JDAM production line achieved a monthly output rate of 3000 units. This happily reflects the determination and effort on the part of our highly successful contractor-government acquisition team and in turn, the principles of Agile Acquisition.

For these sustained efforts, the government-industry JDAM team was recently named winner of the 2004 William J. Perry Award by the Precision Strike Association at its Winter Roundtable meeting and recipient of Aviation Week's 2004 Quality Center Award. The Perry award is presented annually to the public or private sector for outstanding leadership or technical achievements resulting in significant contribution to precision strike systems. The Aviation Week award identifies and celebrates quality, manufacturing excellence, R&D innovation and other best practices in the civil, military and space sections.

Small Diameter Bomb (SDB)

SDB will provide fighter and bomber aircraft with a tactically significant standoff attack capability from outside of point defenses against fixed targets, while increasing loadout and minimizing collateral damage. Last year I reported that the SDB acquisition program was in the middle of a competitive 2-year concept development phase. As promised, that effort culminated in a highly successful down-select decision in September of last year. SDD is now well underway and the program is on schedule to enter LRIP in May 2005.

The program down-select decision and subsequent negotiations provided great-news for the warfighter because the result was a weapon system average unit cost that met warfighter cost goals and an overall acquisition program that is meeting its other requirements. The success of last year's negotiations will allow the Air Force to consider a second developmental spiral of the SDB to provide a moving target attack capability.

Global Hawk

A key enabler to the tactical engagement, Global Hawk utilizes conventional technology operating at altitudes up to 60,000 ft for up to 30 hours to achieve on-demand, long-dwell Intelligence, Surveillance and Reconnaissance coverage of up to 40,000 sq nm per day. During Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF), Global Hawk flew 79 combat sorties and collected over 21,800 images. In OIF, building on lessons learned from its previous deployment, Global Hawk flew 5% of the high-altitude reconnaissance sorties, yet accounted for 55% of the air defense equipment time sensitive targets. It is remarkable warfighting capability for a weapon system that hasn't yet reached IOC. In fact, following extremely successful demonstrations in their two countries, Australia and Germany are entertaining plans to acquire their own Global Hawks.

The Global Hawk program acquisition strategy also exemplifies the preferred spiral development strategy. The successful capability in use today will be subsequently upgraded to include increased payload, a signals intelligence collection capability, and the multi-platform radar technology insertion program (MP-RTIP) for enhanced Ground-Moving Target Indication/Search and Rescue capability (GMTI/SAR).

Predator

First deployed in 1995 for operations over Bosnia, Predator continues to be employed as the most responsive sensor throughout OEF and OIF. We now have over 75,000 flying hours on this system with over 22,000 this past year alone. OIF was Predator's first "networked" operation. By using both in- and out-of-theater control stations with beyond line-of-sight aircraft control, we provided the Combined Forces Air Component Commander (CFACC) additional capability and redundancy to simultaneously control five aircraft over the battlefield, three of

which were controlled via reach-back from the United States. This combined reach-back operation allowed our units to increase their operational flexibility, more efficiently manage manpower, minimize forward footprint, and reduce our high operations tempo. Moreover, of interest to some members, Predator has extended its success this past year by providing tactical imagery directly to ground combat forces and by providing targeting information to AC-130 gunships. As has been noted in previous hearings, this capability can greatly enhance force protection, situational awareness and our ability to rapidly engage targets.

By arming MQ-1 Predator A we now have a very long endurance platform that can find and engage time critical targets. Additionally, we have recently begun enhancing the aircraft to perform better at higher altitudes, increase aircraft endurance, and increase available payload electrical power.

Most noteworthy is our development of the MQ-9 Predator B 'Hunter-Killer' aircraft which will be capable of automatically cueing and prosecuting critical emerging time sensitive targets with a self-contained hard-kill capability to include precision-guided munitions. This will provide a persistent, armed reconnaissance, multi-mission, remotely piloted aircraft (RPA), operating higher and faster than the MQ-1 and with a greatly increased payload capacity.

Conclusion

Over the past year, we in Air Force Acquisition have made great strides in institutionalizing the changes we believe are necessary to achieve the vision of Agile Acquisition: delivering what we promise when we promise. This stems from our ongoing commitment and contributions to the Air Force's core competency of transitioning technology to

warfighting. Given the ever-present need to invest our limited resources efficiently and effectively, we must succeed in our endeavors.

I appreciate the support of this committee and today's opportunity to make part of the record some of the great things that are happening in Air Force Acquisition.