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ON ARMED SERVICES**

TESTIMONY OF

JOHN J. YOUNG

UNDER SECRETARY OF DEFENSE

(ACQUISITION, TECHNOLOGY & LOGISTICS)

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COMMITTEE ON ARMED SERVICES

AIR AND LAND FORCES SUBCOMMITTEE

AND

SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE

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Mr. Chairmen and distinguished members of the Subcommittees, thank you for the opportunity to appear before you today to discuss the F-22-A Raptor, F-35 Lightning II Joint Strike Fighter (JSF), and C-17 programs. My testimony today will provide background and rationale for the Department's fiscal year 2009 budget request. Specifically, I will address the F-22A program of record, the status of the F-35 program, the F135 and F136 engine development programs, and the C-17 program of record, as requested in your letter of February 27, 2008.

Vision

In addition to these important programs, I would also like to summarize my vision for Acquisition, Technology and Logistics, which is to drive the capability to defeat any adversary on any battlefield. I have focused my approach into four strategic thrust areas, each of which has a guiding principle, desired outcomes, and specific initiatives with metrics or steps against which we can measure progress. These four strategic thrust areas are:

- Define Effective and Affordable Tools for the Joint Warfighter
- Responsibly Spend Every Single Tax Dollar
- Take Care of Our People
- DoD Transformation Priorities

In identifying both the problems we face, and the solutions we are seeking, I am committed to transparency throughout the acquisition process. It is my belief

that we need to be clear, concise, and open with regard to what the Department of Defense is seeking and the work it is completing. It is our responsibility as stewards of tax dollars to ensure complete openness, fairness, and objectivity in the acquisition process. I intend that we will be accountable to ensure the success of these initiatives.

I have charged the acquisition team to create an inspired, high-performing organization where:

- We expect each person must make a difference;
- We seek out new ideas and new ways of doing business;
- We constantly question requirements and how we meet them;
- We recognize that we are part of a larger neighborhood of stakeholders interested in successful outcomes at reasonable costs.

We live in an increasingly complex world. Our missions vary widely, so we need strategic resilience and depth; and must ensure our Nation has response options today and for the future with the appropriate capacity and capability to prevail at home and abroad.

I would like to highlight some specific initiatives that capture these philosophies and are fundamental to transforming the acquisition process and

workforce. They are:

1) Program Manager Empowerment and Accountability

Program managers play a critical role in developing and fielding weapon systems. I have put in place a comprehensive strategy to address improving the performance of program managers. Key to this are program manager tenure agreements for ACAT I and II program. My expectation is that tenure agreements should correspond to a major milestone and last approximately 4 years. Another fundamental piece I have established is Program Management Agreements—a contract between the program manager and the acquisition and requirements/resource officials—to ensure a common basis for understanding and accountability; that plans are fully resourced and realistically achievable; and that effective transparent communication takes place throughout the acquisition process.

2) Configuration Steering Boards (CSBs)

I have directed the Military Departments to establish CSBs. My intent is to provide the program manager a forum for socializing changes that improve affordability and executability. Boards will be in place for every current and future ACAT I program and will review all requirement changes and any significant technical configuration changes which potentially could result in cost and schedule changes. Boards are empowered to reject any changes and are expected to only

approve those where the change is deemed critical, funds are identified, and schedule impacts are truly mitigated. I require every acquisition team member to fully engage the Planning, Programming, Budgeting, and Execution (PPBE) process thus creating an avenue for program managers to ensure they are funded to execute their responsibilities or alternately descope their programs to match reduced budget levels.

3) Defense Support Teams (DSTs)

To address the challenge of acquisition execution and assist both industry and DoD program managers, I have expanded the use of these teams who are made up of outside world-class technical experts to address our toughest program technical issues. I expect the teams to resolve emergent problems and help the Department successfully execute tough programs before problems develop.

4) Prototyping and Competition

I have issued policy requiring competitive, technically mature prototyping. My intent is to rectify problems of inadequate technology maturity and lack of understanding of the critical program development path. Prototyping employed at any level—component, subsystem, system—whatever provides the best value to the taxpayer.

5) *AT&L Notes*

I am writing weekly notes to the acquisition workforce. These notes share lessons learned and provide leadership guidance on expected procedures, processes and behaviors within the acquisition workforce. These notes provide a powerful training tool directly from me.

F-22A Program of Record

The Department's position is that 183 F-22A aircraft is the best trade-off between cost and capability. The F-22A is the most advanced tactical aircraft in the world today. The planned modernization program and continued integration of additional air to ground weapons and strike capability guarantee that the F-22A will provide the warfighters transformational power projection, air dominance, and denied access capabilities for the foreseeable future. The unmatched combination of speed, stealth, sensors, and maneuverability make it optimally suited for high-end, high-threat scenarios. The tremendous capability of the F-22A is a critical element in the Department's overall tactical aircraft force structure requirements, as it replaces our legacy F-15 fleet.

The Department's programmed requirement for 183 F-22A aircraft will be complete with the procurement of the 20 aircraft in FY 2009 President's Budget. The Department acknowledges that it would be prudent to keep continued production options available for the next administration. Four additional aircraft,

to be requested in the FY 2009 supplemental, will provide production line flexibility. In that context, the Air Force and Department are assessing the timing and costs related to both line shutdown and continued production activities.

F-35 Program

The F-35 will provide the foundation for the Department's tactical air force structure. The F-35 is an advanced 5th generation fighter that will replace legacy F-16 and A-10 aircraft for the Air Force, F/A-18 and AV-8 aircraft for the Navy and Marine Corps, as well as replacing numerous legacy aircraft for the eight international partners participating in the F-35 program. The F-35 will be more affordable, handle more missions, and provide commonality for our Services and coalition partners. The Department believes that the current program of record of 183 F-22A aircraft will provide an appropriate capability, while enabling procurement of F-35 aircraft in sufficient numbers to ensure affordability, capability, and commonality.

The F-35 program is in the seventh year of a planned 12-year System Development and Demonstration (SDD) phase. All three variants have completed Critical Design Review and are in various stages of production. The first flight for the Conventional Take-Off and Landing (CTOL) variant aircraft occurred in December 2006. AA-1 is a non-production representative test aircraft that has completed over 30 test flights, providing risk reduction and design and

manufacturing process confirmation benefits. The Cooperative Avionics Test Bed (CATB) is flying with initial communication, navigation, and interrogation (CNI) suites. Over the next few months the program will continue to integrate additional CNI capabilities, as well as the radar, sensors, and electronic warfare units that will enable key risk reduction testing prior to actually flying in an F-35. All of the mission systems sensors, as well as the helmet mounted display, are currently flying on other test platforms. The program is approximately 50% complete on their software development, and all three variants are meeting their Key Performance Parameter requirements.

In October 2007, I approved a Mid-Course Risk Reduction (MCRR) plan that restored program risk and reserve funding through test plan optimizations and engineering personnel reductions. Specifically, MCRR aimed to exploit the investment in integrated labs, flying test beds, and modeling and simulation, allowing a reduction in the number of development flight test aircraft required to achieve the SDD objectives from 15 to 13. Additionally, the contractor's development-oriented engineering teams are being reduced as the program transitions into the production phase. The Director, Operational Test and Evaluation (DOT&E) recommended not approving MCRR due to the risks associated with a reduction in test assets. The Department assessed the risks as

manageable since LRIP aircraft could be used if test validation and verification efficiencies were not realized.

Manufacturing of the test aircraft is taking longer than planned due to late-to-need design plans and parts; however, quality is unmatched for a development program at this stage. The initial Short Take-Off and Vertical Landing (STOVL) aircraft (BF-1) is projected to fly this summer. BF-1 is the first production representative aircraft. The first production representative CTOL and Carrier Variant (CV) aircraft's first flights are planned for late in 2009. Seventeen test aircraft are in production with AA-1 flying and BF-1 in ground operations. Last year, I approved release of the funding for the first two Low Rate Initial Production (LRIP) CTOL aircraft. Later this month, I will convene the Defense Acquisition Board (DAB) to review the LRIP 2 award for six CTOL and six STOVL aircraft. The decision on the STOVL aircraft will be delayed until after BF-1 first flight.

The F-35 program faces challenges and issues that are not surprising given the complexity and size of the program. Generally, I am pleased with the program's progress but also realistic that many more challenges lie ahead. Lockheed Martin received their lowest award fee to date in the most recent period. They need to improve their cost and schedule performance, and to recognize that they must be ready to forgo a certain level of remaining fee to offset cost pressures. The F-35 is important to the U. S. Services, as well as our coalition partners, and I

am committed to ensuring that we develop a successful program that meets the warfighters' requirements.

F135 Engine Development

The Pratt and Whitney (P&W) F135 engine development program is aligned with the F-35 air vehicle development. The F135 is the primary engine for the program and began SDD in 2002. Ten F135 ground test engines and three CTOL and three STOVL flight test engines are in developmental testing and have accumulated over 9,000 test hours.

In August 2007, an F135 engine experienced a hardware failure during test stand operations with the STOVL lift fan engaged. Root cause analysis determined that high cycle fatigue caused the 3rd stage Low Pressure Turbine (LPT) blade failure. Test engines were instrumented to assist in verifying the analysis and assist in determining solutions. On February 4, 2008, a similar failure occurred during test stand operations with the STOVL lift fan engaged. Instrumentation and data supported the analysis of high cycle fatigue in the 3rd stage. Additionally, the occurrence confirmed that it was a STOVL powered lift problem experience at high thrust settings and almost exactly the same vibration regime. The engine was cleared for conventional operations and AA-1 flew a few days later. The exact root cause appears likely to be a combination of factors related to the design of the blades, the material composition of the blade dampers, and the symmetry of the 3rd

stage fixed vanes. New blade, blade dampers, and vane hardware are being retrofitted on the test engines and they will begin testing with additional instrumentation in April.

The engine failure will delay BF-1 first flight by 30-60 days. The original plan for BF-1 was to fly in the “conventional” mode for several months and gradually phase in STOVL operations and that will not change. Specific STOVL operations will be delayed approximately 3-4 months and are planned to begin on BF-1 in the December/January timeframe. The schedule delays will not adversely affect the program. The F-135 hardware failure is not unique to a developmental engine program. Many programs experience early test problems that force them to alter the design. That is exactly what happened in this case. The F135 program is progressing well and I expect that to continue.

F136 Engine Development and Alternate Engine Strategy

The General Electric/Rolls Royce (GE/RR) F136 engine lags the F135 program by approximately 3-4 years. There are two pre-SDD F136 engines in testing that have accumulated approximately 600 hours. The first F136 SDD engine will begin testing in December 2008. The Department’s Cost Analysis Improvement Group (CAIG) completed an analysis of the F-35 propulsion system as directed in section 211 of the John Warner National Defense Authorization Act for Fiscal Year 2007. The CAIG determined that there were no life cycle costs

benefits due to competition, in fact, a competitive program would likely cost slightly more. The CAIG also estimated that procurement savings in excess of 21% would be required to recoup the up front investment in a competitive engine program, a savings they deemed unlikely. The CAIG did identify non-quantified benefits to competition. The Department has continually acknowledged the many intangible benefits of competition. The Department did not direct the CAIG to update their analysis. There have been no significant changes to the program that would have resulted in any changes to their findings.

The Department will comply with section 213 of the John Warner National Defense Authorization Act for FY 2008. We will ensure that in each fiscal year where funds are appropriated there is obligation and expenditure of sufficient amounts for continued development and procurement of two options for the JSF propulsion system. However, the Department continues to believe that the investment required to develop an alternate engine is more appropriately proposed for other Department priorities. In the 2006 Quadrennial Defense Review, the Department laid out a future strategic vision to meet the new and broader array of threats to the Nation. It requires the Department to carefully consider capabilities versus cost and, if necessary, divert resources from lower priority programs in order to be able to afford the new capabilities required.

Engine technology development, design and manufacturing process improvements continue to provide increased reliability, maintainability and safety. The F/A-18E/F and F-22A are recent examples of aircraft programs that successfully operate with a single engine provider.

Considering Department priorities, budget realities, and improved engine technology, the Department concluded that the risk associated with a single engine source is acceptable and, while it would be nice to have a second engine, it is not necessary and not affordable.

C-17 Production

Based on the 2005 Mobility Capability Study and Quadrennial Defense Review, the Department concluded that 180 C-17s, combined with the fleet of 112 modernized C-5s, provided sufficient strategic airlift capacity to support the defense strategy with acceptable risk. The requirement for this level of capacity was recently reexamined during our Nunn-McCurdy review of the C-5 Reliability Enhancement and Re-engining Program (RERP). Our analysis supported the conclusion that the programmed fleet of 189 C-17s, plus 52 re-engined C-5 B/Cs and 59 C-5As, also provides sufficient airlift capacity. The Department is now again repeating the Mobility Capability Requirements Study, to assess whether adjustments in the defense strategy may have altered the Department's airlift needs. It is not clear that substantial changes have occurred in DoD's need for

oversized and outsized cargo capacity demand for strategic airlifters, and the Department believes that the C-17 production line should not be kept open. Other general cargo capacity demand adjustments can be substantially addressed by the recent selection of a capable KC-45 tanker by the Air Force.

I again thank the two Subcommittees for their time in allowing me to present the Department's positions on these important programs as well as my vision for acquisition, technology and logistics.