**UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY & LOGISTICS**
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**SUBMITTED STATEMENT**
**SENATE ARMED SERVICES COMMITTEE**
**THURSDAY, MARCH 11, 2010, 10:30 A.M.**

Mr. Chairman, Senator McCain, members of the Committee:

I am pleased to meet with you and my colleagues to discuss the F-35 Joint Strike Fighter (JSF) program.

The Joint Strike Fighter is the Department of Defense's largest acquisition program, and its importance to our national security is immense. As Secretary Gates has said publicly, "we cannot afford, as a nation, not to have this airplane." The JSF will form the backbone of U.S. air combat superiority for the next generation. It will replace the legacy tactical fighter fleets of the Air Force, Navy, and Marine Corps with a dominant, multi-role, fifth-generation aircraft, capable of projecting U.S. power and deterring potential adversaries. Furthermore, the JSF will have the capability to effectively perform missions across the full spectrum of combat operations. For our international partners who are participating in the program, the JSF will become a linchpin for future coalition operations and will help to close a crucial capability gap that will enhance the strength of our security alliances.

At the same time, Secretary Gates has insisted upon performance in acquisition programs, as has this Committee. The JSF program has fallen short on performance over the past several years. This is unacceptable to the taxpayer and to the warfighters of the U.S. Air Force, Navy, and Marine Corps, and to the international partners who also plan to deploy the JSF. We described this situation to the Committee when we met with you in December 2009.

In his presentation of the President's FY11 defense budget, Secretary Gates described some of the steps he has taken to restructure the program, and, notably, to put it on a more realistic schedule and budget. These are important steps, and we will be giving the Committee more detail on them today. But I would like to emphasize that it has taken a couple of years for the JSF program to fall behind, and the Department will need to aggressively manage the program over the coming critical years as it transitions from development and test into production. The Department will be looking to the program, as I know this Committee will, to show progress against a reasonable set of objectives according to a realistic overall plan. The emphasis must be on restoring a key aspect of this airplane when the JSF program was first launched over a decade ago: affordability.

**Reviews of the JSF Program**

The Department has conducted several reviews of the JSF program: two Joint Estimating Team (JET) reviews, an Independent Manufacturing Review Team (IMRT)

review, and a F135 Joint Assessment Team (JAT) review. Let me clear up something right at the beginning: all of these reviews have been provided to your staffs.

The Cost Assessment and Program Evaluation (CAPE) office led the JET I and II reviews. Ms. Fox can describe the documentation and briefings made available to your staff. AT&L commissioned the IMRT and the JAT.

In October 2008, the JET I estimate projected that the System Development and Demonstration (SDD) phase of the program would take longer and cost more than both the JSF Joint Program Office (JPO) and the contractor were projecting. Based on the JET I estimate, Secretary Gates directed in October 2008 that $476M be added to the SDD program in FY10 to mitigate the schedule risk and cost growth forecast.

In July 2009, Deputy Secretary Lynn directed that a second JET estimate, JET II, be prepared by October 2009. The JET II estimate was substantially similar to the JET I estimate. It found that the factors noted in the JET I estimate in October 2008 had persisted for another year. These factors were driven by substantially higher contractor Class 2 change traffic (that is, changes in design not resulting from changes in requirements or capability), which led to increased engineering and software staffing, extended manufacturing span times, and delayed delivery of aircraft to flight test. The overall effect of these factors, the JET II said, would be a 30-month slip in the completion of flight test relative to the JPO plan from the summer of 2009.

Additionally, the IMRT review identified a large number of conditions that would need to be satisfied in order for the production ramp-up planned at that time by the JPO and the contractor to be achieved. At about the same time, the JAT review noted substantial cost growth in the F135 JSF engine program and identified measures to arrest, and possibly reverse, that cost growth.

None of these reviews discovered fundamental technological or manufacturing problems with the JSF program, or any change in the aircraft's projected military capabilities. However, all of these inputs suggested that a Department-wide review of the JSF program was warranted. Further, it was clear that if the JET II estimate was correct, the JSF program would have a critical Nunn-McCurdy breach.

The review, which began in November 2009, was therefore undertaken as though JSF was in Nunn-McCurdy breach. I will describe some of the findings of the review and the management steps taken to date as a result. Most of the important ones were described by Secretary Gates in his budget testimony to this Committee. They are organized according to their respective stages in the life of the program: development, initial production, and full-rate production. I will also describe how the actions we are taking reflect the Department's acquisition reform focus, and the intent of the Weapons Systems Acquisition Reform Act (WSARA) spearheaded by this Committee.

**JSF Development Program**

When we met with the Committee in December, we described how the Department's leadership was presented with two different forecasts about how the JSF program would unfold in the next few years: one from the JPO and contractor, and another from the CAPE-led JET II.

The JET II forecasted, among other things, a longer (by 30 months as measured to the end of developmental flight testing) and more expensive (by $3B over the FYDP) development phase than the JPO. We explained that the Department was trying to reconcile these two forecasts.

As part of the budget process, Secretary Gates determined that the JET II estimate, suitably revised, was the more realistic forecast to use for budgeting purposes and directed that the program be restructured around the JET II forecast. The use of this independent cost estimate (JET II) is consistent with the Weapon Systems Acquisition Reform Act of 2009.

Secretary Gates also directed several steps to partially restore the SDD schedule. First, he directed the procurement of an additional carrier version aircraft to be used for flight testing. This additional asset will help complete the required flight tests sooner and more efficiently. Second, he directed that three early production jets planned for operational test be loaned to developmental test, adding further assets to the flight test program. We are still working on the details of this loan of aircraft to ensure that it does not have an impact on operational test, as Dr. Gilmore will discuss.

Third, Secretary Gates directed the addition of another software integration line to the program. This is intended to prevent the building of the mission systems software from becoming a limiting factor on the development schedule.

The JET II team estimates that these three steps, taken together, can restore 17 months to the development schedule; that is, reverse what would have been a forecasted 30-month delay in the completion of flight test to 13 months, meaning that it will complete in March 2015. This Revised JET II forecast, then, became the final basis for the Department's budget submission.

I would like to emphasize two things about this restructuring of the development program. First, adding aircraft, software engineering capability, and other resources to the development program to arrest the trend identified by the Revised JET II forecast costs money. It did not seem reasonable that the taxpayer should bear the entire cost of this failure of the program to meet expectations. That is why Secretary Gates decided to withhold $614M in fee from the Lockheed Martin SDD contract.

Second, while recovering 17 of the 30 months of projected development program timeline stretch is a constructive result of the JET process's look over the past two years

of the JSF's performance, these are estimates, and reality will get a vote. The next two years will be critical ones for JSF, with delivery of test aircraft to Patuxent River and Edwards AFB, completion and analysis of hundreds of test flights, and commencement of flight training at Eglin AFB this year, and a number of key milestones in 2011, including:

- Initial Marine Short Take Off and Vertical Landing (STOVL) sea trials with Navy amphibious assault ship (LHD);
- Completion of initial land-based carrier catapult and arrested landing testing at Lakehurst, NJ and Patuxent River, MD.
- Release of Block 2 software to flight test;
- Completion of static structural testing of all three variants;
- Mission training initiated at Eglin AFB with Block 1 software;
- Delivery of all LRIP 2 (12 aircraft) and at least 13 of 17 LRIP 3 US and Partner aircraft.

The Department has challenged the contractor to improve upon the Revised JET II estimate, and they have accepted that challenge. The current program plan, as revised, stands up the first training squadron at Eglin AFB in 2011, and delivers operational aircraft to operational squadrons for the Marine Corps 2012, the Air Force in 2013, and the Navy in 2014.

One final note regards Initial Operating Capability (IOC). The IOCs are determined by the Services based on both the program's performance and how the Services define IOC. Each Service has a somewhat different definition, depending on what capabilities they intend to have at IOC, their operational test and training requirements, and the number of aircraft they require for IOC. Since the restructuring, the Services have specified these definitions.

At this time, based on the Revised JET II schedule for the end of developmental and operational test, and their definitions of IOC, the Services are projecting IOCs of 2012 for the Marine Corps, and 2016 for the Air Force and Navy.

**JSF Initial Production**

The Independent Manufacturing Review Team (IMRT) examined the transition from development to production. For JSF, there is a great deal of "concurrency," meaning that development activities like flight testing are still going when production begins. The IMRT identified a large number of conditions that would have to be satisfied in order for the planned production ramp to be achieved, and recommended that the program adopt a somewhat flatter and smoother ramp. The JET II accepted this revised

ramp and then moved it later in time in accordance with the delayed progress of the development program.

Secretary Gates decided to budget to the Revised JET II ramp, and the FY11 budget submission reflects this later, slower ramp up to full-rate production for JSF. As mentioned above, budgeting to this Revised JET II estimate is consonant with the WSARA. This approach has three consequences:

First, it lowers risk by reducing concurrency.

But second, the early aircraft will be more expensive, since they will be produced in smaller annual lots.

Third, this is—again—an estimate. Obviously we would like the program to perform better than the Revised JET II estimate. That is why we are protecting the option to produce 48 aircraft, not 43, in FY11. This will be determined in negotiations with the contractor, which are ongoing. These negotiations include the transitioning of the LRIP contracts for JSF to fixed price at an earlier date. Obviously we think the taxpayer would want us to get more and cheaper aircraft than the JET II estimates.

The pattern here is the same as noted above for development: the Department is budgeting to the independent cost estimate, but challenging the contractor to do better than the estimate.

**JSF Full-Rate Production and Nunn-McCurdy Breach**

Finally, I would like to address full-rate production and the JSF program's breach of the critical Nunn-McCurdy threshold for unit cost.

After several years of low-rate initial production (LRIP), JSF will enter full-rate production and produce 2443 jets for the U.S. and 730 for international partners.

The JSF program has been approaching the Nunn-McCurdy threshold for several years. As the Department began reviewing the program in detail in November 2009, it became apparent that if the JET II estimate was right, the cost increases it was projecting, together with other factors, would cause the JSF program to breach the threshold.

This means that the average price of a JSF aircraft as estimated by the JET – the overall cost of the program averaged over all the years of production divided by the number of aircraft – would be more than 50% higher (in inflation-adjusted dollars) than it was projected to be back in 2001 when the program began.

I expect that Air Force Secretary Donley will formally notify Congress of JSF's Nunn-McCurdy breach within days. The thorough review of a program required under the Nunn-McCurdy law will be a continuation of the process begun in November, when

the JET II estimate indicated the shortcomings of the program over the past years.

There are a number of factors contributing to the cost growth estimate: larger-than-planned development costs driven by STOVL variant weight growth and longer forecasted development schedule; increase in labor and overhead rates; degradation of airframe commonality; lower production quantities; increases in commodity prices (particularly titanium); and major subcontractor cost growth. Ms. Fox will describe the CAPE's estimate of these costs during her testimony.

**The Way Forward**

Mr. Chairman, Senator McCain, and members of the Committee, clearly the JET II and other studies conducted over the past year indicate that the JSF program fell short of expectations and must be restored to affordability and a stable schedule.

Looking ahead to the coming years, several management measures will be critical, and Secretary Gates has elevated the position of the JSF Program Executive Officer to three-star rank to reflect a need for experienced, vigorous management. The JPO, with oversight from the Office of the Secretary of Defense, will need to take a number of critical steps in three areas:

1. The developmental test program and the lead-up to IOC.

2. The ramp-up to full-rate production; and

3. Addressing the Nunn-McCurdy cost growth.

In regard to the developmental test program and the lead up to IOC: First, as I noted earlier, it is important to provide the new test assets and software capabilities to the development program, as directed by Secretary Gates, so there will not be further delays in the completion of flight test. Second, the contractor must be held to account to meet or exceed a defined set of milestones connected to fee on the development contract. These negotiations are underway. Third, the program will need to deal promptly with issues that arise during flight testing—and experience shows there will be such issues.

In regard to the ramp up to full-rate production: the LRIP 4 contract covering FY11 should provide for pricing that meets or exceeds the JET II-based plan of 43 aircraft. These negotiations are also underway. LRIP contracts should transition to a fixed-price structure reflecting the need for the contractor to control costs and not simply pass them on to the Department. The Director of Defense Procurement and Acquisition Policy will be conducting a "should-cost" analysis to prepare for LRIP 5.

In regard to addressing Nunn-McCurdy cost growth: Affordability must be aggressively and relentlessly pursued by all three airframe contractors – Lockheed-Martin, Northrop Grumman, and BAE Systems – and the F135 engine prime, Pratt &

Whitney. As part of our continuing "should cost" analysis, we will be looking at the cost structure of JSF in all its aspects – assembly, parts supplies, staffing, overheads and indirect costs, cash flows, contract structures, fees, and lifecycle costs.

More fundamentally, the program management, contractors, and the Department need to surface candidly and openly issues with this program as they arise, so that Congress is aware of them and they can be addressed. I pledge that we will keep this Committee fully and promptly informed of this program's progress. We will also keep our international partners fully and promptly informed. The program will benefit from the fresh eyes and experienced managerial hand of a three-star Program Executive Officer.

The military capability of JSF will ensure that this aircraft will be the backbone of U.S. combat air superiority for the next generation and, as I stated earlier, the technological capabilities of the aircraft are sound. But its affordability must be restored.

Thank you and I look forward to answering any questions you might have.