



## Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-198



### F-35 Joint Strike Fighter Aircraft (F-35)

As of December 31, 2012

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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UNCLASSIFIED

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## Program Information

### Program Name

F-35 Joint Strike Fighter Aircraft (F-35)

### DoD Component

DoD

### Joint Participants

United States Navy (USN); United States Air Force (USAF); United States Marine Corps (USMC); United Kingdom; Italy; The Netherlands; Turkey; Canada; Australia; Denmark; Norway

The F-35 Program is a joint DoD program for which Service Acquisition Executive (SAE) Authority alternates between the Department of the Navy and the Department of the Air Force, and currently resides with the Navy.

## Responsible Office

### Responsible Office

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**Date Assigned** December 6, 2012

## References

### F-35 Aircraft

**SAR Baseline (Development Estimate)**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 26, 2012

**Approved APB**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 26, 2012

### F-35 Engine

**SAR Baseline (Development Estimate)**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 26, 2012

**Approved APB**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 26, 2012

## **Mission and Description**

The F-35 Joint Strike Fighter Program will develop and field an affordable, highly common family of next-generation strike aircraft for the United States (U.S.) Navy, Air Force, Marine Corps, and allies. The three variants are the F-35A Conventional Takeoff and Landing (CTOL); F-35B Short Takeoff and Vertical Landing (STOVL); and the F-35C Aircraft Carrier suitable Variant (CV). The CTOL will be a stealthy multi-role aircraft, primarily air-to-ground, for the Air Force to replace the F-16 and A-10 and complement the F-22. The STOVL variant will be a multi-role strike fighter aircraft to replace the AV-8B and F/A-18A/C/D for the Marine Corps. The CV will provide the U.S. Navy a multi-role, stealthy strike fighter aircraft to complement the F/A-18E/F. The planned DoD F-35 Fleet will replace the joint services' legacy fleets. The transition from multiple type/model/series to a common platform will result in a smaller total force over time and operational and overall cost efficiencies.

## Executive Summary

*The total F-35 program Research, Development, Test, and Evaluation (RDT&E) estimate decreased by approximately \$280 million (Base Year 2012). However, this SAR contains an RDT&E cost breach in the F-35 Engine subprogram. This breach is not the result of cost growth to the F-35 Engine subprogram. This administrative breach was driven by the correction of an error made in the allocation of program funding to the two subprograms. During the March 26, 2012 Acquisition Program Baseline (APB) build, the program office incorrectly allocated an additional 3.3 percent of the total RDT&E funding estimate to the F-35 Aircraft subprogram that should have been allocated to the F-35 Engine subprogram. This funding consisted of Other Government Costs, International contributions to engine development, and closeout costs for engine contracts. While this SAR corrects the allocation error for the RDT&E Current Estimate for both subprograms, it does not address the error in the March 26, 2012 APB. Therefore, the Department plans to revise the APB to correct the allocation error. Additionally, the Department is reviewing the possibility of breaking out a third subprogram (F136 Engine) that would be added to the APB in order to accurately report the cost of the F135 Engine subprogram. The Department will provide the required congressional notification prior to taking this course of action. The next SAR submission will be based on the revised APB.*

The F-35 remains the DoD's largest cooperative acquisition program, with eight International Partners (IPs) participating with the United States (U.S.) under Memorandums of Understanding for System Development and Demonstration (SDD) and Production, Sustainment and Follow-on Development. Additionally, the program has two Foreign Military Sales customers. The F-35 program has completed over eleven years of SDD and is currently executing Low-Rate Initial Production (LRIP).

The F-35 program continues to make slow, but steady progress and is moving forward in a disciplined manner. There were many successes as well as challenges in 2012. Successes include conducting the first in-flight weapons releases from both the Conventional Take-Off and Landing (CTOL) and Short Take-Off and Vertical Landing (STOVL) variants; stand up of the first operational STOVL squadron at Yuma Marine Corps Air Station (MCAS); executing edge of the flight envelope testing to the aircraft's maximum speed and altitude; and completing a U.S. Air Force operational evaluation clearing the way for the commencement of pilot and maintenance training at Eglin Air Force Base (AFB).

In addition, challenges remain. During Calendar Year (CY) 2012, software block development, Autonomic Logistics Information System (ALIS), and the Generation II (Gen II) Helmet Mounted Display System (HMDS) remained the major focus of program execution. All three are key capabilities that directly impact the F-35 program's ability to reach Initial Operational Capability (IOC). Therefore, these areas will remain the focus in the coming year and through the completion of SDD.

Software risk remains the top development issue for the program. Over the past year, the F-35 program has implemented a major shift in the oversight and management of software development. This effort has resulted in increased cooperation and understanding between the program office and Lockheed Martin (LM). Additionally, the program instituted a Software Block Review Board that provides a forum for joint management of the Software Capability Block Plan (the integrated roadmap that defines the incorporation of capabilities). Although the positive results of these new efforts have built additional confidence in the Block 2B fleet release (required for IOC), the release of Block 3 to the fleet remains a higher risk for delivery in 2017.

The Gen II HMDS is a major technological advance and design challenge. HMDS issues faced by the program over the past year were: (1) "green glow" or insufficient helmet display contrast, (2) latency of the displayed information, (3) "jitter" or lack of stability of the displayed symbology, (4) night vision acuity and (5) alignment of displayed symbology.

In CY 2012, significant work, including dedicated HMDS flight testing, was undertaken to address each issue and to better understand what constitutes acceptable HMDS performance. As a result of testing, the program has mitigated the effects of four of the five HDMS issues. Additional work still needs to be accomplished to ensure that the program has a night vision camera that is effective for operations. As risk reduction, the program continues to fund development of a night vision goggle-based alternative helmet solution. The goggle-based helmet development will continue until the HMDS demonstrates improvement in all of the risk areas.

ALIS provides the warfighter key information to support operations and maintenance. The program experienced a security issue with ALIS Version 1.0.3 (which is needed to operate and sustain aircraft in LRIP Lots 4 and beyond) in CY 2012. This issue was resolved in November 2012 and ALIS 1.0.3 is now fielded at Yuma MCAS, Edwards AFB, Nellis AFB, Ogden AFB, and Eglin AFB. There are some interim operational procedures necessary to mitigate security and data issues. Corrections for these interim procedures will be fielded in future ALIS releases.

During this SAR period, there were two issues that led to the grounding of the F-35 fleet. In both cases, after a system safety risk assessment was conducted and the issues were identified and understood, the fleet was cleared to resume flight operations. The first issue was a failed propulsion fuelhydraulic line on the F-35B STOVL variant. The fuelhydraulic line enables actuator movement for the STOVL vectoring exhaust system. Evidence revealed a quality discrepancy and the investigation found that the line was improperly crimped at the manufacturer. Corrective actions to improve the quality control processes to ensure part integrity have been instituted and all fleet test engines have been inspected.

The second issue was an engine blade crack in a test CTOL aircraft at Edwards AFB. The crack was found on a 3rd stage turbine blade during a routine inspection. The engine in question is part of the F-35 test aircraft fleet and had been operated for extended time in the high-temperature environment in its mission to expand the F-35 flight envelope. Prolonged exposure to high levels of heat and other operational stressors on this specific engine were determined to be the cause of the crack. No additional cracks were found during inspections of the remaining F135 engine inventory. Investigation into the casting anomaly along with development of an inspection method continues and should be complete in mid-summer. The engine prognostic and health management system continuously measures life of turbine blades to keep the fleet safe and will determine if or when parts will need to be replaced based on condition many years from now. Current production continues by inspecting during the manufacturing process.

The SDD flight test program has accumulated over 4,333 total flight test hours through February 28, 2013. In CY 2012, the flight test program exceeded test points and flight targets for both F-35B and F-35C testing. The SDD flight test program also conducted the first in-flight weapons releases from the F-35A and F-35B. Additionally, the program began high angle of the attack testing which has been successful to-date.

Following the International Association of Machinists and Aerospace Workers strike at LM from April 23 to June 28, 2012, LM re-balanced the production line and adjusted scheduled deliveries to execute an achievable post-strike plan. Total assembly operations continue to progress according to the revised plan, improving from eight days behind the post-strike plan to only two days behind.

In CY 2012, the program delivered 30 total aircraft, 29 LRIP and the last SDD aircraft. All LRIP Lot 3 aircraft have completed acceptance flight test, and only one, AN-1, remains to be DD 250'd, pending funding from the Netherlands. Seven of 32 LRIP Lot 4 aircraft have been DD 250'd, with another twelve in flight and ground operations at LM, Fort Worth, Texas. The LRIP Lot 5 production contract for 32 aircraft was definitized in December 2012 showing a four percent decrease in unit cost from LRIP Lot 4. Nine LRIP Lot 5 aircraft have started the assembly process. 38 production aircraft have been delivered to the U.S. and IPs to-date.

The F135 propulsion contractor, Pratt and Whitney, delivered 24 CTOL and 24 STOVL propulsion systems in CY 2012. 87 engines and 35 lift fans (includes spares) have been delivered for the program to-date.

The Air Force Education and Training Command (AETC) conducted an Operational Utility Evaluation (OUE) in CY 2012. The OUE assessed the ability of the 33rd Fighter Wing to conduct pilot training. AETC determined the wing was ready for training and F-35 pilot training commenced in January 2013. Over the course of 2013, the training wing at Eglin AFB will prepare pilots for operational test, operational implementation and the stand-up of future training sites at Luke AFB and MCAS Beaufort in 2014.

The Integrated Training Center at Eglin AFB, Florida now has ten classes in session. These classes include the first Air Force certification courses on logistical support. Currently, there are students (both pilots and maintainance personnel) from the Air Force, Navy, Marine Corps, and United Kingdom. Continued success of these training activities is very important as aircraft logistical support is a critical factor in the Services decision to declare IOC dates.

From a business perspective, the Government and LM reached agreement on LRIP Lot 5 in late November 2012 with full contract definitization on December 14, 2012. This effort also includes manufacturing-support equipment, flight test instrumentation, ancillary mission equipment and Diminishing Manufacturing Sources Redesign. The program is now moving forward with a streamlined, combined LRIP Lot 6 and LRIP Lot 7 negotiation. An LRIP Lot 6 Undefined Contact Action was awarded on December 28, 2012 and will be modified at a later date to procure three aircraft on behalf of the Italian Government and two aircraft on behalf of the Australian Government. Definitization of both LRIP Lot 6 and LRIP Lot 7 is anticipated by June 2013.

In March 2012, in conjunction with the MS B decision, certification was made pursuant to section 2366b of title 10, United States Code (U.S.C.). However, the Defense Acquisition Executive waived provision (3)(c) of 2366b. This provision certifies that the Joint Requirements Oversight Council (JROC) has completed its duties pursuant to section 181(b) of title 10, U.S.C., including an analysis of the operational requirements for the program. The JROC accomplished the bulk of its duties under section 181(b). However, because the IOC dates remained "to be determined" by the Services, paragraph (5) of section 181 (b) cannot be satisfied. The Services plan to publish their respective IOC dates in June 2013. At that time, this waiver will no longer be necessary.



## Threshold Breaches

### F-35 Aircraft

| APB Breaches |  |  |
|--------------|--|--|
|--------------|--|--|

|                     |             |                          |
|---------------------|-------------|--------------------------|
| <b>Schedule</b>     |             | <input type="checkbox"/> |
| <b>Performance</b>  |             | <input type="checkbox"/> |
| <b>Cost</b>         | RDT&E       | <input type="checkbox"/> |
|                     | Procurement | <input type="checkbox"/> |
|                     | MILCON      | <input type="checkbox"/> |
|                     | Acq O&M     | <input type="checkbox"/> |
| <b>O&amp;S Cost</b> |             | <input type="checkbox"/> |
| <b>Unit Cost</b>    | PAUC        | <input type="checkbox"/> |
|                     | APUC        | <input type="checkbox"/> |

| Nunn-McCurdy Breaches |  |  |
|-----------------------|--|--|
|-----------------------|--|--|

|                              |      |      |
|------------------------------|------|------|
| <b>Current UCR Baseline</b>  |      |      |
|                              | PAUC | None |
|                              | APUC | None |
| <b>Original UCR Baseline</b> |      |      |
|                              | PAUC | None |
|                              | APUC | None |

### F-35 Engine

| APB Breaches |  |  |
|--------------|--|--|
|--------------|--|--|

|                     |             |                                     |
|---------------------|-------------|-------------------------------------|
| <b>Schedule</b>     |             | <input type="checkbox"/>            |
| <b>Performance</b>  |             | <input type="checkbox"/>            |
| <b>Cost</b>         | RDT&E       | <input checked="" type="checkbox"/> |
|                     | Procurement | <input type="checkbox"/>            |
|                     | MILCON      | <input type="checkbox"/>            |
|                     | Acq O&M     | <input type="checkbox"/>            |
| <b>O&amp;S Cost</b> |             | <input type="checkbox"/>            |
| <b>Unit Cost</b>    | PAUC        | <input type="checkbox"/>            |
|                     | APUC        | <input type="checkbox"/>            |

| Nunn-McCurdy Breaches |  |  |
|-----------------------|--|--|
|-----------------------|--|--|

|                              |      |      |
|------------------------------|------|------|
| <b>Current UCR Baseline</b>  |      |      |
|                              | PAUC | None |
|                              | APUC | None |
| <b>Original UCR Baseline</b> |      |      |
|                              | PAUC | None |
|                              | APUC | None |

### Explanation of Breach

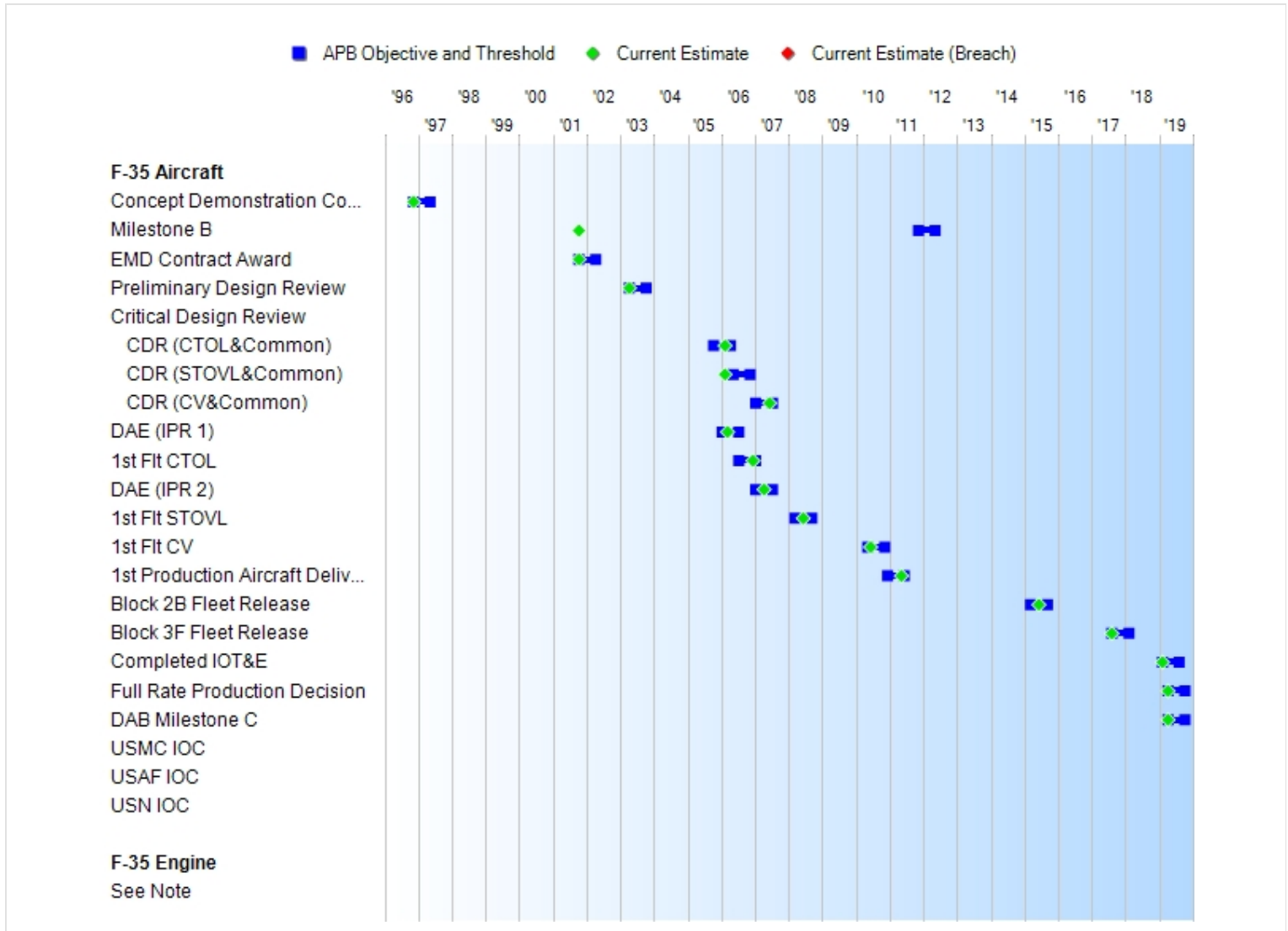
The RDT&E cost breach is the result of correcting an error made in the allocation of program funding to the two subprograms. The breach is not in any way due to cost growth in the F-35 Engine development program.

During the March 26, 2012 Acquisition Program Baseline (APB) build, the program office incorrectly allocated an additional 3.3 percent of the total RDT&E funding estimate to the F-35 Aircraft subprogram. This funding consisted of Other Government Costs, International contributions to Engine development, and closeout costs for Engine contracts.

For the December 2012 SAR, the program corrected the allocation, which caused the Current Estimate for the F-35 Engine subprogram to artificially breach the RDT&E threshold. The F-35 Aircraft subprogram experienced a corresponding decrease in the Current Estimate for RDT&E.

The Milestone Decision Authority has been notified via a Program Deviation Report and a revised APB with the correct funding allocation will be submitted for approval.

# Schedule



| <b>F-35 Aircraft</b>                 |                             |  |          |                         |
|--------------------------------------|-----------------------------|--|----------|-------------------------|
| <b>Milestones</b>                    | <b>SAR Baseline Dev Est</b> | <b>Current APB Development Objective/Threshold</b> |          | <b>Current Estimate</b> |
| Concept Demonstration Contract Award | NOV 1996                    | NOV 1996   | MAY 1997 | NOV 1996                |
| Milestone B                          | NOV 2011                    | NOV 2011   | MAY 2012 | OCT 2001                |
| EMD Contract Award                   | OCT 2001                    | OCT 2001   | APR 2002 | OCT 2001                |
| Preliminary Design Review            | APR 2003                    | APR 2003   | OCT 2003 | APR 2003                |
| Critical Design Review               |                             |  |          |                         |
| CDR (CTOL&Common)                    | OCT 2005                    | OCT 2005   | APR 2006 | FEB 2006                |
| CDR (STOVL&Common)                   | MAY 2006                    | MAY 2006   | NOV 2006 | FEB 2006                |
| CDR (CV&Common)                      | JAN 2007                    | JAN 2007   | JUL 2007 | JUN 2007                |
| DAE (IPR 1)                          | JAN 2006                    | JAN 2006   | JUL 2006 | MAR 2006                |
| 1st Flt CTOL                         | JUL 2006                    | JUL 2006   | JAN 2007 | DEC 2006                |
| DAE (IPR 2)                          | JAN 2007                    | JAN 2007   | JUL 2007 | APR 2007                |
| 1st Flt STOVL                        | MAR 2008                    | MAR 2008   | SEP 2008 | JUN 2008                |
| 1st Flt CV                           | MAY 2010                    | MAY 2010   | NOV 2010 | JUN 2010                |
| 1st Production Aircraft Delivered    | DEC 2010                    | DEC 2010   | JUN 2011 | MAY 2011                |
| Block 2B Fleet Release               | MAR 2015                    | MAR 2015   | SEP 2015 | JUN 2015                |
| Block 3F Fleet Release               | AUG 2017                    | AUG 2017   | FEB 2018 | AUG 2017                |
| Completed IOT&E                      | FEB 2019                    | FEB 2019   | AUG 2019 | FEB 2019                |
| Full Rate Production Decision        | APR 2019                    | APR 2019   | OCT 2019 | APR 2019                |
| DAB Milestone C                      | APR 2019                    | APR 2019   | OCT 2019 | APR 2019                |
| USMC IOC                             | TBD                         | TBD  | TBD      | TBD                     |
| USAF IOC                             | TBD                         | TBD  | TBD      | TBD                     |
| USN IOC                              | TBD                         | TBD  | TBD      | TBD                     |

(Ch-1)

**Acronyms And Abbreviations**

CDR - Critical Design Review  
 CTOL - Conventional Takeoff and Landing  
 CV - Aircraft Carrier Suitable Variant  
 DAB - Defense Acquisition Board  
 DAE - Defense Acquisition Executive  
 EMD - Engineering and Manufacturing Development  
 Flt - Flight  
 FRP - Full Rate Production  
 IOC - Initial Operational Capability  
 IOT&E - Initial Operational Test and Evaluation  
 IPR - Interim Progress Review  
 MS - Milestone  
 STOVL - Short Takeoff and Vertical Landing  
 USAF - United States Air Force  
 USMC - United States Marine Corps  
 USN - United States Navy

**Change Explanations**

(Ch-1) The Block 2B Fleet Release Current Estimate revision from April 2015 to June 2015 reflects incorporation of the Technical Baseline Review test ground rules, the arresting hook redesign, and the Block Review Board approval of the Block 2B Build Plan.

**Memo**

- 1/ Original Milestone (MS) B rescinded in June 2010 due to Nunn-McCurdy breach. Reapproval of MS B was March 2012.
- 2/ Initial Operational Test and Evaluation completion is a Program Office estimate based on 2011 program structure, it will be revised as necessary to reflect approved Test and Evaluation Master Plan revision 4 data.
- 3/ Service Initial Operating Capability dates have not been established pending further service assessment.
- 4/ Full-Rate Production (FRP) Decision will replace the Defense Acquisition Board MS C. Also, the June 2010 Nunn-McCurdy Acquisition Decision Memorandum directs that FRP will be MS C for the F-35 program.

**F-35 Engine**

| Milestones | SAR Baseline Dev Est | Current APB Development Objective/Threshold | Current Estimate |
|------------|----------------------|---|------------------|
| See Note   | N/A                  | N/A   | N/A              |

**Change Explanations**

None

**Memo**

1/ Schedule milestones for the F-35 Engine subprogram are captured as part of the system-level schedule milestones reflected in the F-35 Aircraft subprogram.

## Performance

| F-35 Aircraft                                      |  |  |   |                          |   |        |
|--|--|--|---|--------------------------|---|--------|
| Characteristics                                    | SAR Baseline Dev Est   | Current APB Development Objective/Threshold  |   | Demonstrated Performance | Current Estimate  |        |
| STOVL Mission Performance - STO Distance Flat Deck | With four 1000# JDAMs and two internal AIM-120s, full expendables, execute a 600 foot (450 UK STOVL) STO from LHA, LHD, and aircraft carriers (sea level, tropical day, 10 kts operational WOD) and with a combat radius of 550 nm (STOVL profile). Also must perform STOVL vertical landing with two 1000# JDAMs and two internal AIM-120s, full expendables, and fuel to fly the STOVL Recovery profile. | With four 1000# JDAMs and two internal AIM-120s, full expendables, execute a 600 foot (450 UK STOVL) STO from LHA, LHD, and aircraft carriers (sea level, tropical day, 10 kts operational WOD) and with a combat radius of 550 nm (STOVL profile). Also must perform STOVL vertical landing with two 1000# JDAMs and two internal AIM-120s, full expendables, and fuel to fly the STOVL Recovery profile. | With two 1000# JDAMs and two internal AIM-120s, full expendables, execute a 600 foot (450 UK STOVL) STO from LHA, LHD, and aircraft carriers (sea level, tropical day, 10 kts operational WOD) and with a combat radius of 450 nm (STOVL profile). Also must perform STOVL vertical landing with two 1000# JDAMs and two internal AIM-120s, full expendables, and fuel to fly the STOVL Recovery profile. | TBD                      | Execute 544 ft. STO with 2 JDAM (internal), 2 AIM-120 (internal), fuel to fly 450nm |        |
| Combat Radius NM - CTOL Variant                    | 690  | 690  | 590   | TBD                      | 603   | (Ch-1) |
| Combat Radius NM -                                 | 550  | 550  | 450   | TBD                      | 455   | (Ch-2) |

|  |   |   |   |     |   |        |
|--|---|---|---|-----|---|--------|
| STOVL Variant                                  |   |   |   |     |   |        |
| Combat Radius NM -CV Variant                   | 730   | 730   | 600   | TBD | 610   | (Ch-3) |
| Mission Reliability - CTOL Variant             | 98%   | 98%   | 93%   | TBD | 98%   |        |
| Mission Reliability - CV Variant               | 98%   | 98%   | 95%   | TBD | 98%   |        |
| Mission Reliability - STOVL Variant            | 98%   | 98%   | 95%   | TBD | 98%   |        |
| Logistics Footprint - CTOL Variant             | Less than or equal to 6 C-17 equivalents  | Less than or equal to 6 C-17 equivalents  | Less than or equal to 8 C-17 equivalent loads   | TBD | Less than or equal to 6 C-17 equivalents  |        |
| Logistics Footprint - CV Variant               | Less than or equal to 34,000 cu ft., 183 ST   | Less than or equal to 34,000 cu ft., 183 ST   | Less than or equal to 46,000 cu ft., 243 ST   | TBD | Less than or equal to 34,000 cu ft., 183 ST   |        |
| Logistics Footprint - STOVL Variant            | Less than or equal to 4 C-17 equivalents  | Less than or equal to 4 C-17 equivalents  | Less than or equal to 8 C-17 equivalent loads   | TBD | Less than or equal to 4 C-17 equivalents  |        |
| Logistics Footprint - STOVL Variant L-Class    | Less than or equal to 15,000 cu ft, 104 ST  | Less than or equal to 15,000 cu ft, 104 ST  | Less than or equal to 21,000 cu ft, 136 ST  | TBD | Less than or equal to 15,000 cu ft, 104 ST  |        |
| Sortie Generation Rates - CTOL Variant         | 4.0/3.0/2.0<br>2.5 ASD  | 4.0/3.0/2.0<br>2.5 ASD  | 3.0/2.0/1.0<br>2.5 ASD  | TBD | 4.0/3.0/2.0<br>2.5 ASD  |        |
| Sortie Generation Rates - CV Variant           | 4.0/3.0/1.0<br>1.8 ASD  | 4.0/3.0/1.0<br>1.8 ASD  | 3.0/2.0/1.0<br>1.8 ASD  | TBD | 4.0/3.0/1.0<br>1.8 ASD  |        |
| Sortie Generation Rates - STOVL Variant (USMC) | 6.0/4.0/2.0<br>1.1 ASD  | 6.0/4.0/2.0<br>1.1 ASD  | 4.0/3.0/1.0<br>1.1 ASD  | TBD | 6.0/4.0/2.0<br>1.1 ASD  |        |
| CV Recovery Performance (Vpa)                  | Vpa. Maximum approach speed (Vpa) at required carrier landing weight (RCLW) of less than 140 knots. | Vpa. Maximum approach speed (Vpa) at required carrier landing weight (RCLW) of less than 140 knots. | Vpa. Maximum approach speed (Vpa) at required carrier landing weight (RCLW) of less than 145 knots. | TBD | Vpa. Maximum approach speed (Vpa) at required carrier landing weight (RCLW) of less than 140 knots. |        |

**Requirements Source:** Operational Requirements Document (ORD) Change 3 dated March 16, 2012

### Acronyms And Abbreviations

ASD - Average Sortie Duration  
 CTOL - Conventional Takeoff and Landing  
 CU FT - Cubic Feet  
 CV - Aircraft Carrier Suitable Variant  
 JDAM - Joint Direct Attack Munitions  
 KPP - Key Performance Parameter  
 KTS - Knots  
 NM - Nautical Miles  
 OEIE - Operational Effective Information Exchange  
 RF - Radio Frequency  
 ST - Short Tons  
 STO - Short Takeoff  
 STOVL - Short Takeoff and Vertical Landing  
 TBD - To be determined  
 UK - United Kingdom  
 USMC - United States Marine Corps  
 WOD - Wind Over the Deck

### Change Explanations

(Ch-1) The Current Estimate for the CTOL variant combat radius changed from 590nm to 603nm due to test and evaluation results to date.

(Ch-2) The Current Estimate for the STOVL variant combat radius changed from 450nm to 455nm due to test and evaluation results to date.

(Ch-3) The Current Estimate for the CTOL variant combat radius changed from 600nm to 610nm due to test and evaluation results to date.

Classified Performance information is provided in the classified annex to this submission.

### F-35 Engine

| Characteristics | SAR Baseline Dev Est | Current APB Development Objective/Threshold |     | Demonstrated Performance | Current Estimate |
|-----------------|----------------------|---|-----|--------------------------|------------------|
| See Note        | N/A                  | N/A   | N/A | TBD                      | N/A              |

**Requirements Source:** Operational Requirements Document (ORD) Change 3 dated March 16, 2012

### Acronyms And Abbreviations

JROCM - Joint Requirements Oversight Council Memorandum

### Change Explanations

None

### Memo

1/ Performance characteristics for the F-35 Engine subprogram are captured as part of the system-level performance characteristics reflected in the F-35 Aircraft subprogram.



## Track To Budget

### F-35 Aircraft

#### General Memo

F-35 is DoD's largest cooperative development program. In addition to DoD's funding lines, eight International Partners are providing funding in the System Development and Demonstration (SDD) Phase under a Memorandum of Understanding (MOU): United Kingdom, Italy, The Netherlands, Turkey, Canada, Australia, Denmark, and Norway. All but Turkey and Australia were partners in the prior phase. Associated financial contributions are reflected in the Annual Funding section as Appropriation 9999, Research, Development, Test and Evaluation Non-Treasury Funds.

#### RDT&E

|           |              |  |             |        |
|-----------|--------------|--|-------------|--------|
| APPN 1319 | BA 04        | PE 0603800N  | (Navy)      |        |
|           | Project 2209 | RDT&E, Navy CDP  |             | (Sunk) |
| APPN 1319 | BA 05        | PE 0604800M  | (Navy)      |        |
|           | Project 2262 | RDT&E, Marine Corps  | (Shared)    |        |
| APPN 1319 | BA 05        | PE 0604800N  | (Navy)      |        |
|           | Project 2261 | RDT&E, Navy EMD/JSF  | (Shared)    |        |
|           | Project 3194 | RDT&E, Navy EMD/Joint<br>Reprogramming Center                              |             | (Sunk) |
|           | Project 9999 | RDT&E, Navy<br>EMD/Congressional Adds                                      |             | (Sunk) |
| APPN 3600 | BA 04        | PE 0603800F  | (Air Force) |        |
|           | Project 2025 | RDT&E, Air Force CDP   |             | (Sunk) |
| APPN 3600 | BA 05        | PE 0604800F  | (Air Force) |        |
|           | Project 3831 | RDT&E, Air Force EMD/Joint<br>Strike Fighter Quantity of<br>RDT&E Articles |             |        |
| APPN 0400 | BA 03        | PE 0603800E  | (DoD)       |        |
|           |              | RDT&E, DARPA   |             | (Sunk) |

Research, Development, Test, and Evaluation cost excludes Follow-On Development Funding.

**Procurement**

|           |            |                               |             |
|-----------|------------|-------------------------------|-------------|
| APPN 1506 | BA 01      | PE 0204146N                   | (Navy)      |
|           | ICN 0147   | JSF (Navy)                    |             |
| APPN 1506 | BA 01      | PE 0204146M                   | (Navy)      |
|           | ICN 0152   | JSF (Marine Corps)            |             |
| APPN 1506 | BA 05      | PE 0204146M                   | (Navy)      |
|           | ICN 0592   | F-35 STOVL Mods               |             |
| APPN 1506 | BA 05      | PE 0204146N                   | (Navy)      |
|           | ICN 0593   | F-35 CV Mods                  |             |
| APPN 1506 | BA 06      | PE 0204146M                   | (Navy)      |
|           | ICN 0605   | Initial Spares (Marine Corps) | (Shared)    |
| APPN 1506 | BA 06      | PE 0204146N                   | (Navy)      |
|           | ICN 0605   | Initial Spares (Navy)         | (Shared)    |
| APPN 3010 | BA 06      | PE 0207142F                   | (Air Force) |
|           | ICN 000999 | Initial Spares (Air Force)    | (Shared)    |
| APPN 3010 | BA 01      | PE 0207142F                   | (Air Force) |
|           | ICN ATA000 | JSF (Air Force)               |             |
| APPN 3010 | BA 05      | PE 0207142F                   | (Air Force) |
|           | ICN F03500 | Mods (Air Force)              | (Sunk)      |

**MILCON**

|           |       |             |        |
|-----------|-------|-------------|--------|
| APPN 1205 | BA 01 | PE 0212576N | (Navy) |
|           |       | MILCON, USN | (Sunk) |
| APPN 1205 | BA 01 | PE 0216496M | (Navy) |

|           |       |             |             |        |
|-----------|-------|-------------|-------------|--------|
|           |       | MILCON, USN |             |        |
| APPN 1205 | BA 01 | PE 0816376N | (Navy)      |        |
|           |       | MILCON, USN |             | (Sunk) |
| APPN 3300 | BA 01 | PE 0207142F | (Air Force) |        |
|           |       | MILCON, AF  |             |        |

### F-35 Engine

#### General Memo

F-35 is DoD's largest cooperative development program. In addition to DoD's funding lines, eight International Partners are providing funding in the System Development and Demonstration (SDD) Phase under a Memorandum of Understanding (MOU): United Kingdom, Italy, The Netherlands, Turkey, Canada, Australia, Denmark, and Norway. All but Turkey and Australia were partners in the prior phase. Associated financial contributions are reflected in the Annual Funding section as Appropriation 9999, Research, Development, Test and Evaluation Non-Treasury Funds.

#### RDT&E

|           |              |  |             |        |
|-----------|--------------|--|-------------|--------|
| APPN 1319 | BA 04        | PE 0603800N  | (Navy)      |        |
|           | Project 2209 | RDT&E, Navy CDP  |             | (Sunk) |
| APPN 1319 | BA 05        | PE 0604800M  | (Navy)      |        |
|           | Project 2262 | RDT&E, Marine Corps                                      | (Shared)    |        |
| APPN 1319 | BA 05        | PE 0604800N  | (Navy)      |        |
|           | Project 2261 | RDT&E, Navy EMD/JSF                                      | (Shared)    |        |
|           | Project 3194 | RDT&E, Navy EMD/Joint<br>Reprogramming Center            |             | (Sunk) |
|           | Project 9999 | RDT&E, Navy<br>EMD/Congressional Adds                    |             | (Sunk) |
| APPN 3600 | BA 04        | PE 0603800F  | (Air Force) |        |
|           | Project 2025 | RDT&E, Air Force CDP                                     |             | (Sunk) |
| APPN 3600 | BA 05        | PE 0604800F  | (Air Force) |        |
|           | Project 3831 | RDT&E, Air Force EMD/Joint<br>Strike Fighter Quantity of |             |        |

## RDT&amp;E Articles

|           |       |              |        |
|-----------|-------|--------------|--------|
| APPN 0400 | BA 03 | PE 0603800E  | (DoD)  |
|           |       | RDT&E, DARPA | (Sunk) |

Research, Development, Test, and Evaluation cost excludes Follow-On Development Funding.

|                    |
|--------------------|
| <b>Procurement</b> |
|--------------------|

|           |            |                               |             |
|-----------|------------|-------------------------------|-------------|
| APPN 1506 | BA 01      | PE 0204146N                   | (Navy)      |
|           | ICN 0147   | JSF (Navy)                    |             |
| APPN 1506 | BA 01      | PE 0204146M                   | (Navy)      |
|           | ICN 0152   | JSF (Marine Corps)            |             |
| APPN 1506 | BA 06      | PE 0204146N                   | (Navy)      |
|           | ICN 0605   | Initial Spares (Navy)         | (Shared)    |
| APPN 1506 | BA 06      | PE 0204146M                   | (Navy)      |
|           | ICN 0605   | Initial Spares (Marine Corps) | (Shared)    |
| APPN 3010 | BA 06      | PE 0207142F                   | (Air Force) |
|           | ICN 000999 | Initial Spares (Air Force)    | (Shared)    |
| APPN 3010 | BA 01      | PE 0207142F                   | (Air Force) |
|           | ICN ATA000 | JSF (Air Force)               |             |
| APPN 3010 | BA 05      | PE 0207142F                   | (Air Force) |
|           | ICN F03500 | Mods (Air Force)              | (Sunk)      |

## Cost and Funding

### Cost Summary - Total Program

#### Total Acquisition Cost and Quantity - Total Program

| Appropriation  | BY2012 \$M           |   |     | BY2012 \$M       | TY \$M               |                                   |                  |
|----------------|----------------------|---|-----|------------------|----------------------|-----------------------------------|------------------|
|                | SAR Baseline Dev Est | Current APB Development Objective/Threshold |     | Current Estimate | SAR Baseline Dev Est | Current APB Development Objective | Current Estimate |
| RDT&E          | 59677.3              | 59677.3                                     | --  | 59398.1          | 55233.8              | 55233.8                           | 55182.9          |
| Procurement    | 266665.8             | 266665.8                                    | --  | 256130.1         | 335680.7             | 335680.7                          | 331428.4         |
| Flyaway        | 229571.3             | --  | --  | 221108.2         | 290938.0             | --                                | 287991.6         |
| Recurring      | 203995.2             | --  | --  | 195941.6         | 260071.4             | --                                | 256629.8         |
| Non Recurring  | 25576.1              | --  | --  | 25166.6          | 30866.6              | --                                | 31361.8          |
| Support        | 37094.5              | --  | --  | 35021.9          | 44742.7              | --                                | 43436.8          |
| Other Support  | 20686.4              | --  | --  | 18892.0          | 24068.0              | --                                | 23339.4          |
| Initial Spares | 16408.1              | --  | --  | 16129.9          | 20674.7              | --                                | 20097.4          |
| MILCON         | 4168.0               | 4168.0                                      | --  | 3897.8           | 4797.3               | 4797.3                            | 4600.2           |
| Acq O&M        | 0.0                  | 0.0   | --  | 0.0              | 0.0                  | 0.0                               | 0.0              |
| Total          | 330511.1             | 330511.1                                    | N/A | 319426.0         | 395711.8             | 395711.8                          | 391211.5         |

## Cost and Funding

### Cost Summary - F-35 Aircraft

#### Total Acquisition Cost and Quantity - F-35 Aircraft

| Appropriation  | BY2012 \$M           |   |          | BY2012 \$M       | TY \$M               |                                   |                  |
|----------------|----------------------|---|----------|------------------|----------------------|-----------------------------------|------------------|
|                | SAR Baseline Dev Est | Current APB Development Objective/Threshold |          | Current Estimate | SAR Baseline Dev Est | Current APB Development Objective | Current Estimate |
| RDT&E          | 47982.1              | 47982.1                                     | 52780.9  | 46457.5          | 44410.1              | 44410.1                           | 43360.7          |
| Procurement    | 224332.9             | 224332.9                                    | 246767.1 | 215579.0         | 282647.8             | 282647.8                          | 278951.9         |
| Flyaway        | 194241.7             | --  | --       | 187225.0         | 246537.6             | --                                | 243850.7         |
| Recurring      | 171769.6             | --  | --       | 164631.0         | 219233.1             | --                                | 215616.5         |
| Non Recurring  | 22472.1              | --  | --       | 22594.0          | 27304.5              | --                                | 28234.2          |
| Support        | 30091.2              | --  | --       | 28354.0          | 36110.2              | --                                | 35101.2          |
| Other Support  | 18617.5              | --  | --       | 17018.4          | 21661.0              | --                                | 21012.2          |
| Initial Spares | 11473.7              | --  | --       | 11335.6          | 14449.2              | --                                | 14089.0          |
| MILCON         | 4168.0               | 4168.0                                      | 4582.5   | 3897.8           | 4797.3               | 4797.3                            | 4600.2           |
| Acq O&M        | 0.0                  | 0.0   | --       | 0.0              | 0.0                  | 0.0                               | 0.0              |
| Total          | 276483.0             | 276483.0                                    | N/A      | 265934.3         | 331855.2             | 331855.2                          | 326912.8         |

Confidence Level for Current APB Cost 50% - This estimate, like all previous Cost Analysis Improvement Group (CAIG) and Cost Assessment and Program Evaluation (CAPE) estimates, is built upon a product-oriented work breakdown structure; is based on historical actual cost information to the maximum extent possible; and, most importantly, is based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition program (MDAPs). Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimates will prove too low or too high for execution of the program described.

| Quantity    | SAR Baseline Dev Est | Current APB Development | Current Estimate |
|-------------|----------------------|-------------------------|------------------|
| RDT&E       | 14                   | 14                      | 14               |
| Procurement | 2443                 | 2443                    | 2443             |
| Total       | 2457                 | 2457                    | 2457             |

## Cost Summary - F-35 Engine

### Total Acquisition Cost and Quantity - F-35 Engine

| Appropriation  | BY2012 \$M           |   |         | BY2012 \$M       | TY \$M               |                                   |                  |
|----------------|----------------------|---|---------|------------------|----------------------|-----------------------------------|------------------|
|                | SAR Baseline Dev Est | Current APB Development Objective/Threshold |         | Current Estimate | SAR Baseline Dev Est | Current APB Development Objective | Current Estimate |
| RDT&E          | 11695.2              | 11695.2                                     | 12741.9 | <b>12940.6</b>   | 10823.7              | 10823.7                           | 11822.2          |
| Procurement    | 42332.9              | 42332.9                                     | 46566.2 | 40551.1          | 53032.9              | 53032.9                           | 52476.5          |
| Flyaway        | 35329.6              | --  | --      | 33883.2          | 44400.4              | --                                | 44140.9          |
| Recurring      | 32225.6              | --  | --      | 31310.6          | 40838.3              | --                                | 41013.3          |
| Non Recurring  | 3104.0               | --  | --      | 2572.6           | 3562.1               | --                                | 3127.6           |
| Support        | 7003.3               | --  | --      | 6667.9           | 8632.5               | --                                | 8335.6           |
| Other Support  | 2068.9               | --  | --      | 1873.6           | 2407.0               | --                                | 2327.2           |
| Initial Spares | 4934.4               | --  | --      | 4794.3           | 6225.5               | --                                | 6008.4           |
| MILCON         | 0.0                  | 0.0   | --      | 0.0              | 0.0                  | 0.0                               | 0.0              |
| Acq O&M        | 0.0                  | 0.0   | --      | 0.0              | 0.0                  | 0.0                               | 0.0              |
| Total          | 54028.1              | 54028.1                                     | N/A     | 53491.7          | 63856.6              | 63856.6                           | 64298.7          |

<sup>1</sup> APB Breach

Confidence Level for Current APB Cost 50% - This estimate, like all previous Cost Analysis Improvement Group (CAIG) and Cost Assessment and Program Evaluation (CAPE) estimates, is built upon a product-oriented work breakdown structure; is based on historical actual cost information to the maximum extent possible; and, most importantly, is based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition program (MDAPs). Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimates will prove too low or too high for execution of the program described.

| Quantity    | SAR Baseline Dev Est | Current APB Development | Current Estimate |
|-------------|----------------------|-------------------------|------------------|
| RDT&E       | 14                   | 14                      | 14               |
| Procurement | 2443                 | 2443                    | 2443             |
| Total       | 2457                 | 2457                    | 2457             |

## Cost and Funding

### Funding Summary - Total Program

#### Appropriation and Quantity Summary - Total Program FY2014 President's Budget / December 2012 SAR (TY\$ M)

| Appropriation | Prior   | FY2013 | FY2014 | FY2015  | FY2016  | FY2017  | FY2018  | To Complete | Total    |
|---------------|---------|--------|--------|---------|---------|---------|---------|-------------|----------|
| RDT&E         | 46586.1 | 2822.9 | 1777.4 | 1748.9  | 1376.7  | 673.6   | 197.3   | 0.0         | 55182.9  |
| Procurement   | 27893.5 | 6471.9 | 6548.8 | 7946.0  | 9984.8  | 11432.4 | 13186.6 | 247964.4    | 331428.4 |
| MILCON        | 1098.8  | 131.1  | 250.9  | 392.6   | 216.7   | 114.3   | 11.0    | 2384.8      | 4600.2   |
| Acq O&M       | 0.0     | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0         | 0.0      |
| PB 2014 Total | 75578.4 | 9425.9 | 8577.1 | 10087.5 | 11578.2 | 12220.3 | 13394.9 | 250349.2    | 391211.5 |
| PB 2013 Total | 75859.2 | 9411.9 | 9241.2 | 10299.8 | 11828.4 | 12566.2 | 14142.4 | 252362.7    | 395711.8 |
| Delta         | -280.8  | 14.0   | -664.1 | -212.3  | -250.2  | -345.9  | -747.5  | -2013.5     | -4500.3  |



## Cost and Funding

### Funding Summary - F-35 Aircraft

#### Appropriation and Quantity Summary - F-35 Aircraft FY2014 President's Budget / December 2012 SAR (TY\$ M)

| Appropriation | Prior   | FY2013 | FY2014 | FY2015 | FY2016  | FY2017  | FY2018  | To Complete | Total    |
|---------------|---------|--------|--------|--------|---------|---------|---------|-------------|----------|
| RDT&E         | 35799.7 | 2464.8 | 1376.9 | 1580.6 | 1272.5  | 669.7   | 196.5   | 0.0         | 43360.7  |
| Procurement   | 23548.5 | 5452.0 | 5675.8 | 6918.0 | 8604.1  | 9744.7  | 11108.7 | 207900.1    | 278951.9 |
| MILCON        | 1098.8  | 131.1  | 250.9  | 392.6  | 216.7   | 114.3   | 11.0    | 2384.8      | 4600.2   |
| Acq O&M       | 0.0     | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     | 0.0         | 0.0      |
| PB 2014 Total | 60447.0 | 8047.9 | 7303.6 | 8891.2 | 10093.3 | 10528.7 | 11316.2 | 210284.9    | 326912.8 |
| PB 2013 Total | 62482.0 | 7844.7 | 7762.6 | 8687.2 | 9979.8  | 10619.2 | 11737.5 | 212742.2    | 331855.2 |
| Delta         | -2035.0 | 203.2  | -459.0 | 204.0  | 113.5   | -90.5   | -421.3  | -2457.3     | -4942.4  |

Program funding and production quantities listed in this SAR are consistent with the FY 2014 President's Budget (PB). The FY 2014 PB did not reflect the enacted DoD appropriation for FY 2013, nor sequestration; it reflected the President's requested amounts for FY 2013.

| Quantity      | Undistributed | Prior | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | To Complete | Total |
|---------------|---------------|-------|--------|--------|--------|--------|--------|--------|-------------|-------|
| Development   | 14            | 0     | 0      | 0      | 0      | 0      | 0      | 0      | 0           | 14    |
| Production    | 0             | 121   | 29     | 29     | 42     | 62     | 76     | 100    | 1984        | 2443  |
| PB 2014 Total | 14            | 121   | 29     | 29     | 42     | 62     | 76     | 100    | 1984        | 2457  |
| PB 2013 Total | 14            | 121   | 29     | 29     | 44     | 66     | 76     | 110    | 1968        | 2457  |
| Delta         | 0             | 0     | 0      | 0      | -2     | -4     | 0      | -10    | 16          | 0     |

## Funding Summary - F-35 Engine

### Appropriation and Quantity Summary - F-35 Engine FY2014 President's Budget / December 2012 SAR (TY\$ M)

| Appropriation | Prior   | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | To Complete | Total   |
|---------------|---------|--------|--------|--------|--------|--------|--------|-------------|---------|
| RDT&E         | 10786.4 | 358.1  | 400.5  | 168.3  | 104.2  | 3.9    | 0.8    | 0.0         | 11822.2 |
| Procurement   | 4345.0  | 1019.9 | 873.0  | 1028.0 | 1380.7 | 1687.7 | 2077.9 | 40064.3     | 52476.5 |
| MILCON        | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0         | 0.0     |
| Acq O&M       | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0         | 0.0     |
| PB 2014 Total | 15131.4 | 1378.0 | 1273.5 | 1196.3 | 1484.9 | 1691.6 | 2078.7 | 40064.3     | 64298.7 |
| PB 2013 Total | 13377.2 | 1567.2 | 1478.6 | 1612.6 | 1848.6 | 1947.0 | 2404.9 | 39620.5     | 63856.6 |
| Delta         | 1754.2  | -189.2 | -205.1 | -416.3 | -363.7 | -255.4 | -326.2 | 443.8       | 442.1   |

Program funding and production quantities listed in this SAR are consistent with the FY 2014 President's Budget (PB). The FY 2014 PB did not reflect the enacted DoD appropriation for FY 2013, nor sequestration; it reflected the President's requested amounts for FY 2013.

| Quantity      | Undistributed | Prior | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | To Complete | Total |
|---------------|---------------|-------|--------|--------|--------|--------|--------|--------|-------------|-------|
| Development   | 14            | 0     | 0      | 0      | 0      | 0      | 0      | 0      | 0           | 14    |
| Production    | 0             | 121   | 29     | 29     | 42     | 62     | 76     | 100    | 1984        | 2443  |
| PB 2014 Total | 14            | 121   | 29     | 29     | 42     | 62     | 76     | 100    | 1984        | 2457  |
| PB 2013 Total | 14            | 121   | 29     | 29     | 44     | 66     | 76     | 110    | 1968        | 2457  |
| Delta         | 0             | 0     | 0      | 0      | -2     | -4     | 0      | -10    | 16          | 0     |

## Cost and Funding

### Annual Funding By Appropriation - F-35 Aircraft

#### Annual Funding TY\$ - F-35 Aircraft

#### 0400 | RDT&E | Research, Development, Test, and Evaluation, Defense-Wide

| Fiscal Year     | Quantity | End Item Recurring Flyaway TY \$M | Non End Item Recurring Flyaway TY \$M | Non Recurring Flyaway TY \$M | Total Flyaway TY \$M | Total Support TY \$M | Total Program TY \$M |
|-----------------|----------|-----------------------------------|---------------------------------------|------------------------------|----------------------|----------------------|----------------------|
| 1996            | --       | --                                | --                                    | --                           | --                   | --                   | 23.2                 |
| 1997            | --       | --                                | --                                    | --                           | --                   | --                   | 54.8                 |
| 1998            | --       | --                                | --                                    | --                           | --                   | --                   | 16.9                 |
| <b>Subtotal</b> | --       | --                                | --                                    | --                           | --                   | --                   | <b>94.9</b>          |

## Annual Funding BY\$ - F-35 Aircraft

## 0400 | RDT&amp;E | Research, Development, Test, and Evaluation, Defense-Wide

| Fiscal Year     | Quantity | End Item Recurring Flyaway<br>BY 2012 \$M | Non End Item Recurring Flyaway<br>BY 2012 \$M | Non Recurring Flyaway<br>BY 2012 \$M | Total Flyaway<br>BY 2012 \$M | Total Support<br>BY 2012 \$M | Total Program<br>BY 2012 \$M |
|-----------------|----------|---|---|--------------------------------------|------------------------------|------------------------------|------------------------------|
| 1996            | --       | --  | --  | --                                   | --                           | --                           | 30.1                         |
| 1997            | --       | --  | --  | --                                   | --                           | --                           | 70.2                         |
| 1998            | --       | --  | --  | --                                   | --                           | --                           | 21.5                         |
| <b>Subtotal</b> | --       | --  | --  | --                                   | --                           | --                           | <b>121.8</b>                 |

## Annual Funding TY\$ - F-35 Aircraft

## 3600 | RDT&amp;E | Research, Development, Test, and Evaluation, Air Force

| Fiscal Year     | Quantity | End Item Recurring Flyaway TY \$M | Non End Item Recurring Flyaway TY \$M | Non Recurring Flyaway TY \$M | Total Flyaway TY \$M | Total Support TY \$M | Total Program TY \$M |
|-----------------|----------|-----------------------------------|---------------------------------------|------------------------------|----------------------|----------------------|----------------------|
| 1995            | --       | --                                | --                                    | --                           | --                   | --                   | 67.4                 |
| 1996            | --       | --                                | --                                    | --                           | --                   | --                   | 65.4                 |
| 1997            | --       | --                                | --                                    | --                           | --                   | --                   | 202.3                |
| 1998            | --       | --                                | --                                    | --                           | --                   | --                   | 357.2                |
| 1999            | --       | --                                | --                                    | --                           | --                   | --                   | 366.7                |
| 2000            | --       | --                                | --                                    | --                           | --                   | --                   | 200.3                |
| 2001            | --       | --                                | --                                    | --                           | --                   | --                   | 274.3                |
| 2002            | --       | --                                | --                                    | --                           | --                   | --                   | 304.1                |
| 2003            | --       | --                                | --                                    | --                           | --                   | --                   | 1212.0               |
| 2004            | --       | --                                | --                                    | --                           | --                   | --                   | 1636.3               |
| 2005            | --       | --                                | --                                    | --                           | --                   | --                   | 1528.7               |
| 2006            | --       | --                                | --                                    | --                           | --                   | --                   | 1685.1               |
| 2007            | --       | --                                | --                                    | --                           | --                   | --                   | 1640.8               |
| 2008            | --       | --                                | --                                    | --                           | --                   | --                   | 1369.8               |
| 2009            | --       | --                                | --                                    | --                           | --                   | --                   | 1206.3               |
| 2010            | --       | --                                | --                                    | --                           | --                   | --                   | 1570.3               |
| 2011            | --       | --                                | --                                    | --                           | --                   | --                   | 715.2                |
| 2012            | --       | --                                | --                                    | --                           | --                   | --                   | 1263.6               |
| 2013            | --       | --                                | --                                    | --                           | --                   | --                   | 1013.7               |
| 2014            | --       | --                                | --                                    | --                           | --                   | --                   | 582.5                |
| 2015            | --       | --                                | --                                    | --                           | --                   | --                   | 537.6                |
| 2016            | --       | --                                | --                                    | --                           | --                   | --                   | 434.4                |
| 2017            | --       | --                                | --                                    | --                           | --                   | --                   | 173.9                |
| 2018            | --       | --                                | --                                    | --                           | --                   | --                   | 78.0                 |
| <b>Subtotal</b> | <b>5</b> | --                                | --                                    | --                           | --                   | --                   | <b>18485.9</b>       |

## Annual Funding BY\$ - F-35 Aircraft

## 3600 | RDT&amp;E | Research, Development, Test, and Evaluation, Air Force

| Fiscal Year     | Quantity | End Item Recurring Flyaway BY 2012 \$M | Non End Item Recurring Flyaway BY 2012 \$M | Non Recurring Flyaway BY 2012 \$M | Total Flyaway BY 2012 \$M | Total Support BY 2012 \$M | Total Program BY 2012 \$M |
|-----------------|----------|--|--|-----------------------------------|---------------------------|---------------------------|---------------------------|
| 1995            | --       | --                                     | --   | --                                | --                        | --                        | 89.0                      |
| 1996            | --       | --                                     | --   | --                                | --                        | --                        | 84.9                      |
| 1997            | --       | --                                     | --   | --                                | --                        | --                        | 259.5                     |
| 1998            | --       | --                                     | --   | --                                | --                        | --                        | 454.5                     |
| 1999            | --       | --                                     | --   | --                                | --                        | --                        | 461.2                     |
| 2000            | --       | --                                     | --   | --                                | --                        | --                        | 248.3                     |
| 2001            | --       | --                                     | --   | --                                | --                        | --                        | 335.4                     |
| 2002            | --       | --                                     | --   | --                                | --                        | --                        | 368.1                     |
| 2003            | --       | --                                     | --   | --                                | --                        | --                        | 1445.9                    |
| 2004            | --       | --                                     | --   | --                                | --                        | --                        | 1899.0                    |
| 2005            | --       | --                                     | --   | --                                | --                        | --                        | 1728.7                    |
| 2006            | --       | --                                     | --   | --                                | --                        | --                        | 1848.0                    |
| 2007            | --       | --                                     | --   | --                                | --                        | --                        | 1756.3                    |
| 2008            | --       | --                                     | --   | --                                | --                        | --                        | 1440.0                    |
| 2009            | --       | --                                     | --   | --                                | --                        | --                        | 1251.9                    |
| 2010            | --       | --                                     | --   | --                                | --                        | --                        | 1605.4                    |
| 2011            | --       | --                                     | --   | --                                | --                        | --                        | 712.5                     |
| 2012            | --       | --                                     | --   | --                                | --                        | --                        | 1234.5                    |
| 2013            | --       | --                                     | --   | --                                | --                        | --                        | 971.4                     |
| 2014            | --       | --                                     | --   | --                                | --                        | --                        | 547.8                     |
| 2015            | --       | --                                     | --   | --                                | --                        | --                        | 496.1                     |
| 2016            | --       | --                                     | --   | --                                | --                        | --                        | 393.4                     |
| 2017            | --       | --                                     | --   | --                                | --                        | --                        | 154.6                     |
| 2018            | --       | --                                     | --   | --                                | --                        | --                        | 68.0                      |
| <b>Subtotal</b> | <b>5</b> | --                                     | --   | --                                | --                        | --                        | <b>19854.4</b>            |

## Annual Funding TY\$ - F-35 Aircraft

## 1319 | RDT&amp;E | Research, Development, Test, and Evaluation, Navy

| Fiscal Year     | Quantity | End Item Recurring Flyaway TY \$M | Non End Item Recurring Flyaway TY \$M | Non Recurring Flyaway TY \$M | Total Flyaway TY \$M | Total Support TY \$M | Total Program TY \$M |
|-----------------|----------|-----------------------------------|---------------------------------------|------------------------------|----------------------|----------------------|----------------------|
| 1994            | --       | --                                | --                                    | --                           | --                   | --                   | 23.7                 |
| 1995            | --       | --                                | --                                    | --                           | --                   | --                   | 79.0                 |
| 1996            | --       | --                                | --                                    | --                           | --                   | --                   | 64.6                 |
| 1997            | --       | --                                | --                                    | --                           | --                   | --                   | 195.6                |
| 1998            | --       | --                                | --                                    | --                           | --                   | --                   | 360.4                |
| 1999            | --       | --                                | --                                    | --                           | --                   | --                   | 378.9                |
| 2000            | --       | --                                | --                                    | --                           | --                   | --                   | 191.7                |
| 2001            | --       | --                                | --                                    | --                           | --                   | --                   | 274.3                |
| 2002            | --       | --                                | --                                    | --                           | --                   | --                   | 370.8                |
| 2003            | --       | --                                | --                                    | --                           | --                   | --                   | 1090.1               |
| 2004            | --       | --                                | --                                    | --                           | --                   | --                   | 1548.3               |
| 2005            | --       | --                                | --                                    | --                           | --                   | --                   | 1510.3               |
| 2006            | --       | --                                | --                                    | --                           | --                   | --                   | 1658.7               |
| 2007            | --       | --                                | --                                    | --                           | --                   | --                   | 1470.4               |
| 2008            | --       | --                                | --                                    | --                           | --                   | --                   | 1285.0               |
| 2009            | --       | --                                | --                                    | --                           | --                   | --                   | 1271.5               |
| 2010            | --       | --                                | --                                    | --                           | --                   | --                   | 1440.5               |
| 2011            | --       | --                                | --                                    | --                           | --                   | --                   | 1003.4               |
| 2012            | --       | --                                | --                                    | --                           | --                   | --                   | 1060.7               |
| 2013            | --       | --                                | --                                    | --                           | --                   | --                   | 1301.8               |
| 2014            | --       | --                                | --                                    | --                           | --                   | --                   | 790.0                |
| 2015            | --       | --                                | --                                    | --                           | --                   | --                   | 1043.0               |
| 2016            | --       | --                                | --                                    | --                           | --                   | --                   | 838.1                |
| 2017            | --       | --                                | --                                    | --                           | --                   | --                   | 495.8                |
| 2018            | --       | --                                | --                                    | --                           | --                   | --                   | 118.5                |
| <b>Subtotal</b> | <b>9</b> | --                                | --                                    | --                           | --                   | --                   | <b>19865.1</b>       |

**Annual Funding BY\$ - F-35 Aircraft**  
**1319 | RDT&E | Research, Development, Test, and Evaluation, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non Recurring Flyaway BY 2012 \$M</b> | <b>Total Flyaway BY 2012 \$M</b> | <b>Total Support BY 2012 \$M</b> | <b>Total Program BY 2012 \$M</b> |
|--------------------|-----------------|---|---|--|----------------------------------|----------------------------------|----------------------------------|
| 1994               | --              | --  | --  | --                                       | --                               | --                               | 31.9                             |
| 1995               | --              | --  | --  | --                                       | --                               | --                               | 104.3                            |
| 1996               | --              | --  | --  | --                                       | --                               | --                               | 83.9                             |
| 1997               | --              | --  | --  | --                                       | --                               | --                               | 250.9                            |
| 1998               | --              | --  | --  | --                                       | --                               | --                               | 458.6                            |
| 1999               | --              | --  | --  | --                                       | --                               | --                               | 476.5                            |
| 2000               | --              | --  | --  | --                                       | --                               | --                               | 237.6                            |
| 2001               | --              | --  | --  | --                                       | --                               | --                               | 335.4                            |
| 2002               | --              | --  | --  | --                                       | --                               | --                               | 448.8                            |
| 2003               | --              | --  | --  | --                                       | --                               | --                               | 1300.4                           |
| 2004               | --              | --  | --  | --                                       | --                               | --                               | 1796.9                           |
| 2005               | --              | --  | --  | --                                       | --                               | --                               | 1707.8                           |
| 2006               | --              | --  | --  | --                                       | --                               | --                               | 1819.0                           |
| 2007               | --              | --  | --  | --                                       | --                               | --                               | 1573.9                           |
| 2008               | --              | --  | --  | --                                       | --                               | --                               | 1350.8                           |
| 2009               | --              | --  | --  | --                                       | --                               | --                               | 1319.6                           |
| 2010               | --              | --  | --  | --                                       | --                               | --                               | 1472.7                           |
| 2011               | --              | --  | --  | --                                       | --                               | --                               | 999.6                            |
| 2012               | --              | --  | --  | --                                       | --                               | --                               | 1036.3                           |
| 2013               | --              | --  | --  | --                                       | --                               | --                               | 1247.5                           |
| 2014               | --              | --  | --  | --                                       | --                               | --                               | 742.9                            |
| 2015               | --              | --  | --  | --                                       | --                               | --                               | 962.5                            |
| 2016               | --              | --  | --  | --                                       | --                               | --                               | 759.0                            |
| 2017               | --              | --  | --  | --                                       | --                               | --                               | 440.6                            |
| 2018               | --              | --  | --  | --                                       | --                               | --                               | 103.4                            |
| <b>Subtotal</b>    | <b>9</b>        | --  | --  | --                                       | --                               | --                               | <b>21060.8</b>                   |



**Annual Funding TY\$ - F-35 Aircraft  
9999 | RDT&E | Non Treasury Funds**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item<br/>Recurring<br/>Flyaway<br/>TY \$M</b> | <b>Non End<br/>Item<br/>Recurring<br/>Flyaway<br/>TY \$M</b> | <b>Non<br/>Recurring<br/>Flyaway<br/>TY \$M</b> | <b>Total<br/>Flyaway<br/>TY \$M</b> | <b>Total<br/>Support<br/>TY \$M</b> | <b>Total<br/>Program<br/>TY \$M</b> |
|--------------------|-----------------|--|--|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1996               | --              | --   | --   | --  | --                                  | --                                  | 11.3                                |
| 1997               | --              | --   | --   | --  | --                                  | --                                  | 67.1                                |
| 1998               | --              | --   | --   | --  | --                                  | --                                  | 72.1                                |
| 1999               | --              | --   | --   | --  | --                                  | --                                  | 49.0                                |
| 2000               | --              | --   | --   | --  | --                                  | --                                  | 27.7                                |
| 2001               | --              | --   | --   | --  | --                                  | --                                  | 7.0                                 |
| 2002               | --              | --   | --   | --  | --                                  | --                                  | 263.1                               |
| 2003               | --              | --   | --   | --  | --                                  | --                                  | 310.5                               |
| 2004               | --              | --   | --   | --  | --                                  | --                                  | 463.7                               |
| 2005               | --              | --   | --   | --  | --                                  | --                                  | 755.3                               |
| 2006               | --              | --   | --   | --  | --                                  | --                                  | 802.7                               |
| 2007               | --              | --   | --   | --  | --                                  | --                                  | 656.2                               |
| 2008               | --              | --   | --   | --  | --                                  | --                                  | 552.7                               |
| 2009               | --              | --   | --   | --  | --                                  | --                                  | 257.3                               |
| 2010               | --              | --   | --   | --  | --                                  | --                                  | 133.8                               |
| 2011               | --              | --   | --   | --  | --                                  | --                                  | 185.9                               |
| 2012               | --              | --   | --   | --  | --                                  | --                                  | 145.7                               |
| 2013               | --              | --   | --   | --  | --                                  | --                                  | 149.3                               |
| 2014               | --              | --   | --   | --  | --                                  | --                                  | 4.4                                 |
| <b>Subtotal</b>    | --              | --   | --   | --  | --                                  | --                                  | <b>4914.8</b>                       |

**Annual Funding BY\$ - F-35 Aircraft  
9999 | RDT&E | Non Treasury Funds**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item<br/>Recurring<br/>Flyaway<br/>BY 2012 \$M</b> | <b>Non End<br/>Item<br/>Recurring<br/>Flyaway<br/>BY 2012 \$M</b> | <b>Non<br/>Recurring<br/>Flyaway<br/>BY 2012 \$M</b> | <b>Total<br/>Flyaway<br/>BY 2012 \$M</b> | <b>Total<br/>Support<br/>BY 2012 \$M</b> | <b>Total<br/>Program<br/>BY 2012 \$M</b> |
|--------------------|-----------------|---|---|--|--|--|--|
| 1996               | --              | --  | --  | --   | --                                       | --                                       | 14.7                                     |
| 1997               | --              | --  | --  | --   | --                                       | --                                       | 86.1                                     |
| 1998               | --              | --  | --  | --   | --                                       | --                                       | 91.7                                     |
| 1999               | --              | --  | --  | --   | --                                       | --                                       | 61.6                                     |
| 2000               | --              | --  | --  | --   | --                                       | --                                       | 34.3                                     |
| 2001               | --              | --  | --  | --   | --                                       | --                                       | 8.6                                      |
| 2002               | --              | --  | --  | --   | --                                       | --                                       | 318.5                                    |
| 2003               | --              | --  | --  | --   | --                                       | --                                       | 370.4                                    |
| 2004               | --              | --  | --  | --   | --                                       | --                                       | 538.2                                    |
| 2005               | --              | --  | --  | --   | --                                       | --                                       | 854.1                                    |
| 2006               | --              | --  | --  | --   | --                                       | --                                       | 880.3                                    |
| 2007               | --              | --  | --  | --   | --                                       | --                                       | 702.4                                    |
| 2008               | --              | --  | --  | --   | --                                       | --                                       | 581.0                                    |
| 2009               | --              | --  | --  | --   | --                                       | --                                       | 267.0                                    |
| 2010               | --              | --  | --  | --   | --                                       | --                                       | 136.8                                    |
| 2011               | --              | --  | --  | --   | --                                       | --                                       | 185.2                                    |
| 2012               | --              | --  | --  | --   | --                                       | --                                       | 142.4                                    |
| 2013               | --              | --  | --  | --   | --                                       | --                                       | 143.1                                    |
| 2014               | --              | --  | --  | --   | --                                       | --                                       | 4.1                                      |
| <b>Subtotal</b>    | --              | --  | --  | --   | --                                       | --                                       | <b>5420.5</b>                            |

**Annual Funding TY\$ - F-35 Aircraft**  
**3010 | Procurement | Aircraft Procurement, Air Force**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway TY \$M</b> | <b>Non End Item Recurring Flyaway TY \$M</b> | <b>Non Recurring Flyaway TY \$M</b> | <b>Total Flyaway TY \$M</b> | <b>Total Support TY \$M</b> | <b>Total Program TY \$M</b> |
|--------------------|-----------------|--|--|-------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| 2006               | --              | 107.2                                    | --   | --                                  | 107.2                       | --                          | 107.2                       |
| 2007               | 2               | 428.5                                    | --   | 80.5                                | 509.0                       | 91.1                        | 600.1                       |
| 2008               | 6               | 983.1                                    | --   | 171.9                               | 1155.0                      | 131.5                       | 1286.5                      |
| 2009               | 7               | 1009.2                                   | --   | 276.8                               | 1286.0                      | 175.8                       | 1461.8                      |
| 2010               | 10              | 1471.2                                   | --   | 355.7                               | 1826.9                      | 277.7                       | 2104.6                      |
| 2011               | 22              | 2751.2                                   | --   | 551.9                               | 3303.1                      | 679.6                       | 3982.7                      |
| 2012               | 18              | 2041.5                                   | --   | 369.3                               | 2410.8                      | 793.0                       | 3203.8                      |
| 2013               | 19              | 2052.4                                   | --   | 588.2                               | 2640.6                      | 610.1                       | 3250.7                      |
| 2014               | 19              | 2081.6                                   | --   | 727.1                               | 2808.7                      | 445.5                       | 3254.2                      |
| 2015               | 30              | 2984.1                                   | --   | 757.6                               | 3741.7                      | 555.8                       | 4297.5                      |
| 2016               | 44              | 3847.0                                   | --   | 811.2                               | 4658.2                      | 736.6                       | 5394.8                      |
| 2017               | 48              | 3991.3                                   | --   | 847.8                               | 4839.1                      | 639.7                       | 5478.8                      |
| 2018               | 60              | 4479.3                                   | --   | 767.2                               | 5246.5                      | 791.5                       | 6038.0                      |
| 2019               | 60              | 4331.9                                   | --   | 489.9                               | 4821.8                      | 795.4                       | 5617.2                      |
| 2020               | 60              | 4455.7                                   | --   | 447.4                               | 4903.1                      | 759.3                       | 5662.4                      |
| 2021               | 80              | 5751.3                                   | --   | 568.2                               | 6319.5                      | 919.2                       | 7238.7                      |
| 2022               | 80              | 5806.8                                   | --   | 573.5                               | 6380.3                      | 836.7                       | 7217.0                      |
| 2023               | 80              | 5947.9                                   | --   | 590.6                               | 6538.5                      | 945.8                       | 7484.3                      |
| 2024               | 80              | 6057.6                                   | --   | 600.0                               | 6657.6                      | 889.6                       | 7547.2                      |
| 2025               | 80              | 6224.1                                   | --   | 614.4                               | 6838.5                      | 846.7                       | 7685.2                      |
| 2026               | 80              | 6384.0                                   | --   | 628.0                               | 7012.0                      | 890.3                       | 7902.3                      |
| 2027               | 80              | 6495.2                                   | --   | 653.9                               | 7149.1                      | 905.1                       | 8054.2                      |
| 2028               | 80              | 6613.4                                   | --   | 650.2                               | 7263.6                      | 736.0                       | 7999.6                      |
| 2029               | 80              | 6736.0                                   | --   | 631.2                               | 7367.2                      | 893.3                       | 8260.5                      |
| 2030               | 80              | 6870.3                                   | --   | 638.5                               | 7508.8                      | 893.4                       | 8402.2                      |
| 2031               | 80              | 7063.4                                   | --   | 662.1                               | 7725.5                      | 980.7                       | 8706.2                      |
| 2032               | 80              | 7224.6                                   | --   | 677.2                               | 7901.8                      | 712.4                       | 8614.2                      |
| 2033               | 80              | 7504.3                                   | --   | 700.8                               | 8205.1                      | 608.6                       | 8813.7                      |
| 2034               | 80              | 7664.7                                   | --   | 712.0                               | 8376.7                      | 432.7                       | 8809.4                      |
| 2035               | 80              | 7828.8                                   | --   | 723.6                               | 8552.4                      | 434.0                       | 8986.4                      |

|                 |             |                 |           |                |                 |                |                 |
|-----------------|-------------|-----------------|-----------|----------------|-----------------|----------------|-----------------|
| 2036            | 80          | 7989.7          | --        | 737.9          | 8727.6          | 373.1          | 9100.7          |
| 2037            | 78          | 7290.6          | --        | 742.7          | 8033.3          | 382.6          | 8415.9          |
| <b>Subtotal</b> | <b>1763</b> | <b>152467.9</b> | <b>--</b> | <b>18347.3</b> | <b>170815.2</b> | <b>20162.8</b> | <b>190978.0</b> |

**Annual Funding BY\$ - F-35 Aircraft**  
**3010 | Procurement | Aircraft Procurement, Air Force**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non Recurring Flyaway BY 2012 \$M</b> | <b>Total Flyaway BY 2012 \$M</b> | <b>Total Support BY 2012 \$M</b> | <b>Total Program BY 2012 \$M</b> |
|--------------------|-----------------|---|---|--|----------------------------------|----------------------------------|----------------------------------|
| 2006               | --              | 115.9   | --  | --                                       | 115.9                            | --                               | 115.9                            |
| 2007               | 2               | 452.5   | --  | 85.1                                     | 537.6                            | 96.2                             | 633.8                            |
| 2008               | 6               | 1022.8  | --  | 178.9                                    | 1201.7                           | 136.8                            | 1338.5                           |
| 2009               | 7               | 1035.2  | --  | 283.9                                    | 1319.1                           | 180.3                            | 1499.4                           |
| 2010               | 10              | 1475.4  | --  | 356.7                                    | 1832.1                           | 278.5                            | 2110.6                           |
| 2011               | 22              | 2694.5  | --  | 540.6                                    | 3235.1                           | 665.5                            | 3900.6                           |
| 2012               | 18              | 1961.2  | --  | 354.8                                    | 2316.0                           | 761.8                            | 3077.8                           |
| 2013               | 19              | 1934.4  | --  | 554.4                                    | 2488.8                           | 575.0                            | 3063.8                           |
| 2014               | 19              | 1925.4  | --  | 672.4                                    | 2597.8                           | 412.1                            | 3009.9                           |
| 2015               | 30              | 2708.7  | --  | 687.6                                    | 3396.3                           | 504.5                            | 3900.8                           |
| 2016               | 44              | 3426.8  | --  | 722.5                                    | 4149.3                           | 656.2                            | 4805.5                           |
| 2017               | 48              | 3489.0  | --  | 741.2                                    | 4230.2                           | 559.2                            | 4789.4                           |
| 2018               | 60              | 3842.6  | --  | 658.2                                    | 4500.8                           | 679.0                            | 5179.8                           |
| 2019               | 60              | 3646.9  | --  | 412.4                                    | 4059.3                           | 669.6                            | 4728.9                           |
| 2020               | 60              | 3681.2  | --  | 369.5                                    | 4050.7                           | 627.4                            | 4678.1                           |
| 2021               | 80              | 4662.9  | --  | 460.8                                    | 5123.7                           | 745.2                            | 5868.9                           |
| 2022               | 80              | 4620.2  | --  | 456.3                                    | 5076.5                           | 665.7                            | 5742.2                           |
| 2023               | 80              | 4644.2  | --  | 461.1                                    | 5105.3                           | 738.5                            | 5843.8                           |
| 2024               | 80              | 4641.7  | --  | 459.8                                    | 5101.5                           | 681.6                            | 5783.1                           |
| 2025               | 80              | 4680.3  | --  | 462.0                                    | 5142.3                           | 636.7                            | 5779.0                           |
| 2026               | 80              | 4711.0  | --  | 463.5                                    | 5174.5                           | 657.0                            | 5831.5                           |
| 2027               | 80              | 4703.7  | --  | 473.6                                    | 5177.3                           | 655.4                            | 5832.7                           |
| 2028               | 80              | 4700.0  | --  | 462.1                                    | 5162.1                           | 523.1                            | 5685.2                           |
| 2029               | 80              | 4697.9  | --  | 440.2                                    | 5138.1                           | 623.0                            | 5761.1                           |
| 2030               | 80              | 4702.2  | --  | 437.0                                    | 5139.2                           | 611.5                            | 5750.7                           |
| 2031               | 80              | 4744.2  | --  | 444.8                                    | 5189.0                           | 658.7                            | 5847.7                           |
| 2032               | 80              | 4762.0  | --  | 446.5                                    | 5208.5                           | 469.5                            | 5678.0                           |
| 2033               | 80              | 4854.2  | --  | 453.3                                    | 5307.5                           | 393.7                            | 5701.2                           |
| 2034               | 80              | 4865.5  | --  | 451.9                                    | 5317.4                           | 274.7                            | 5592.1                           |
| 2035               | 80              | 4877.0  | --  | 450.8                                    | 5327.8                           | 270.3                            | 5598.1                           |

|                 |             |                 |           |                |                 |                |                 |
|-----------------|-------------|-----------------|-----------|----------------|-----------------|----------------|-----------------|
| 2036            | 80          | 4884.4          | --        | 451.2          | 5335.6          | 228.0          | 5563.6          |
| 2037            | 78          | 4373.9          | --        | 445.6          | 4819.5          | 229.5          | 5049.0          |
| <b>Subtotal</b> | <b>1763</b> | <b>113537.8</b> | <b>--</b> | <b>14338.7</b> | <b>127876.5</b> | <b>15864.2</b> | <b>143740.7</b> |

**Cost Quantity Information - F-35 Aircraft**  
**3010 | Procurement | Aircraft Procurement, Air Force**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item<br/>Recurring<br/>Flyaway<br/>(Aligned<br/>with<br/>Quantity)<br/>BY 2012<br/>\$M</b> |
|--------------------|-----------------|---|
| 2006               | --              | --  |
| 2007               | 2               | 452.5   |
| 2008               | 6               | 1022.8  |
| 2009               | 7               | 1035.2  |
| 2010               | 10              | 1475.4  |
| 2011               | 22              | 2694.5  |
| 2012               | 18              | 1961.2  |
| 2013               | 19              | 1934.4  |
| 2014               | 19              | 1925.4  |
| 2015               | 30              | 2708.7  |
| 2016               | 44              | 3426.8  |
| 2017               | 48              | 3489.0  |
| 2018               | 60              | 3842.6  |
| 2019               | 60              | 3649.9  |
| 2020               | 60              | 3681.2  |
| 2021               | 80              | 4662.9  |
| 2022               | 80              | 4620.2  |
| 2023               | 80              | 4644.2  |
| 2024               | 80              | 4641.7  |
| 2025               | 80              | 4680.3  |
| 2026               | 80              | 4711.0  |
| 2027               | 80              | 4703.7  |
| 2028               | 80              | 4700.0  |
| 2029               | 80              | 4697.9  |
| 2030               | 80              | 4702.2  |
| 2031               | 80              | 4744.2  |
| 2032               | 80              | 4762.0  |
| 2033               | 80              | 4854.2  |

|                 |             |                 |
|-----------------|-------------|-----------------|
| 2034            | 80          | 4865.5          |
| 2035            | 80          | 4890.0          |
| 2036            | 80          | 4944.3          |
| 2037            | 78          | 4413.9          |
| <b>Subtotal</b> | <b>1763</b> | <b>113537.8</b> |



**Annual Funding TY\$ - F-35 Aircraft  
1506 | Procurement | Aircraft Procurement, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway TY \$M</b> | <b>Non End Item Recurring Flyaway TY \$M</b> | <b>Non Recurring Flyaway TY \$M</b> | <b>Total Flyaway TY \$M</b> | <b>Total Support TY \$M</b> | <b>Total Program TY \$M</b> |
|--------------------|-----------------|--|--|-------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| 2007               | --              | 96.9                                     | --   | --                                  | 96.9                        | --                          | 96.9                        |
| 2008               | 6               | 923.2                                    | --   | 38.6                                | 961.8                       | 10.7                        | 972.5                       |
| 2009               | 7               | 1062.0                                   | --   | 181.9                               | 1243.9                      | 206.2                       | 1450.1                      |
| 2010               | 20              | 2681.2                                   | --   | 304.4                               | 2985.6                      | 560.9                       | 3546.5                      |
| 2011               | 10              | 1494.8                                   | --   | 251.6                               | 1746.4                      | 431.9                       | 2178.3                      |
| 2012               | 13              | 1477.7                                   | --   | 333.1                               | 1810.8                      | 746.7                       | 2557.5                      |
| 2013               | 10              | 1159.6                                   | --   | 347.1                               | 1506.7                      | 694.6                       | 2201.3                      |
| 2014               | 10              | 1242.5                                   | --   | 530.4                               | 1772.9                      | 648.7                       | 2421.6                      |
| 2015               | 12              | 1391.8                                   | --   | 732.0                               | 2123.8                      | 496.7                       | 2620.5                      |
| 2016               | 18              | 1918.4                                   | --   | 731.2                               | 2649.6                      | 559.7                       | 3209.3                      |
| 2017               | 28              | 2742.4                                   | --   | 687.3                               | 3429.7                      | 836.2                       | 4265.9                      |
| 2018               | 40              | 3346.5                                   | --   | 690.3                               | 4036.8                      | 1033.9                      | 5070.7                      |
| 2019               | 40              | 3317.6                                   | --   | 410.1                               | 3727.7                      | 749.2                       | 4476.9                      |
| 2020               | 40              | 3289.3                                   | --   | 390.1                               | 3679.4                      | 1046.2                      | 4725.6                      |
| 2021               | 40              | 3286.5                                   | --   | 400.5                               | 3687.0                      | 1169.9                      | 4856.9                      |
| 2022               | 40              | 3301.2                                   | --   | 411.6                               | 3712.8                      | 908.9                       | 4621.7                      |
| 2023               | 40              | 3332.2                                   | --   | 422.2                               | 3754.4                      | 910.9                       | 4665.3                      |
| 2024               | 40              | 3393.4                                   | --   | 431.7                               | 3825.1                      | 755.7                       | 4580.8                      |
| 2025               | 40              | 3452.2                                   | --   | 420.4                               | 3872.6                      | 781.4                       | 4654.0                      |
| 2026               | 40              | 3505.2                                   | --   | 405.0                               | 3910.2                      | 659.0                       | 4569.2                      |
| 2027               | 40              | 3553.2                                   | --   | 378.8                               | 3932.0                      | 404.0                       | 4336.0                      |
| 2028               | 40              | 3607.2                                   | --   | 380.7                               | 3987.9                      | 370.3                       | 4358.2                      |
| 2029               | 40              | 3649.4                                   | --   | 364.2                               | 4013.6                      | 381.5                       | 4395.1                      |
| 2030               | 40              | 3538.8                                   | --   | 369.6                               | 3908.4                      | 305.1                       | 4213.5                      |
| 2031               | 21              | 1893.2                                   | --   | 199.7                               | 2092.9                      | 217.0                       | 2309.9                      |
| 2032               | 5               | 492.2                                    | --   | 74.4                                | 566.6                       | 53.1                        | 619.7                       |
| <b>Subtotal</b>    | <b>680</b>      | <b>63148.6</b>                           | <b>--</b>                                    | <b>9886.9</b>                       | <b>73035.5</b>              | <b>14938.4</b>              | <b>87973.9</b>              |

**Annual Funding BY\$ - F-35 Aircraft  
1506 | Procurement | Aircraft Procurement, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non Recurring Flyaway BY 2012 \$M</b> | <b>Total Flyaway BY 2012 \$M</b> | <b>Total Support BY 2012 \$M</b> | <b>Total Program BY 2012 \$M</b> |
|--------------------|-----------------|---|---|--|----------------------------------|----------------------------------|----------------------------------|
| 2007               | --              | 102.3   | --  | --                                       | 102.3                            | --                               | 102.3                            |
| 2008               | 6               | 960.5   | --  | 40.2                                     | 1000.7                           | 11.1                             | 1011.8                           |
| 2009               | 7               | 1089.3  | --  | 186.6                                    | 1275.9                           | 211.5                            | 1487.4                           |
| 2010               | 20              | 2688.9  | --  | 305.3                                    | 2994.2                           | 562.5                            | 3556.7                           |
| 2011               | 10              | 1464.0  | --  | 246.4                                    | 1710.4                           | 423.0                            | 2133.4                           |
| 2012               | 13              | 1419.6  | --  | 320.0                                    | 1739.6                           | 717.3                            | 2456.9                           |
| 2013               | 10              | 1092.9  | --  | 327.1                                    | 1420.0                           | 654.8                            | 2074.8                           |
| 2014               | 10              | 1149.2  | --  | 490.6                                    | 1639.8                           | 600.0                            | 2239.8                           |
| 2015               | 12              | 1263.3  | --  | 664.4                                    | 1927.7                           | 450.9                            | 2378.6                           |
| 2016               | 18              | 1708.9  | --  | 651.2                                    | 2360.1                           | 498.6                            | 2858.7                           |
| 2017               | 28              | 2397.3  | --  | 600.8                                    | 2998.1                           | 731.0                            | 3729.1                           |
| 2018               | 40              | 2870.8  | --  | 592.2                                    | 3463.0                           | 887.0                            | 4350.0                           |
| 2019               | 40              | 2793.0  | --  | 345.2                                    | 3138.2                           | 630.8                            | 3769.0                           |
| 2020               | 40              | 2717.5  | --  | 322.3                                    | 3039.8                           | 864.3                            | 3904.1                           |
| 2021               | 40              | 2664.6  | --  | 324.7                                    | 2989.3                           | 948.5                            | 3937.8                           |
| 2022               | 40              | 2626.6  | --  | 327.5                                    | 2954.1                           | 723.1                            | 3677.2                           |
| 2023               | 40              | 2601.8  | --  | 329.7                                    | 2931.5                           | 711.2                            | 3642.7                           |
| 2024               | 40              | 2600.2  | --  | 330.8                                    | 2931.0                           | 579.1                            | 3510.1                           |
| 2025               | 40              | 2595.9  | --  | 316.1                                    | 2912.0                           | 587.6                            | 3499.6                           |
| 2026               | 40              | 2586.6  | --  | 298.9                                    | 2885.5                           | 486.3                            | 3371.8                           |
| 2027               | 40              | 2573.2  | --  | 274.3                                    | 2847.5                           | 292.6                            | 3140.1                           |
| 2028               | 40              | 2563.6  | --  | 270.6                                    | 2834.2                           | 263.1                            | 3097.3                           |
| 2029               | 40              | 2545.2  | --  | 254.1                                    | 2799.3                           | 266.0                            | 3065.3                           |
| 2030               | 40              | 2422.0  | --  | 253.0                                    | 2675.0                           | 208.8                            | 2883.8                           |
| 2031               | 21              | 1271.6  | --  | 134.2                                    | 1405.8                           | 145.7                            | 1551.5                           |
| 2032               | 5               | 324.4   | --  | 49.1                                     | 373.5                            | 35.0                             | 408.5                            |
| <b>Subtotal</b>    | <b>680</b>      | <b>51093.2</b>                                | <b>--</b>   | <b>8255.3</b>                            | <b>59348.5</b>                   | <b>12489.8</b>                   | <b>71838.3</b>                   |

**Cost Quantity Information - F-35 Aircraft**  
**1506 | Procurement | Aircraft Procurement, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item<br/>Recurring<br/>Flyaway<br/>(Aligned<br/>with<br/>Quantity)<br/>BY 2012<br/>\$M</b> |
|--------------------|-----------------|---|
| 2007               | --              | --  |
| 2008               | 6               | 960.5   |
| 2009               | 7               | 1089.3  |
| 2010               | 20              | 2688.9  |
| 2011               | 10              | 1464.0  |
| 2012               | 13              | 1419.6  |
| 2013               | 10              | 1092.9  |
| 2014               | 10              | 1149.2  |
| 2015               | 12              | 1263.3  |
| 2016               | 18              | 1708.9  |
| 2017               | 28              | 2397.3  |
| 2018               | 40              | 2870.8  |
| 2019               | 40              | 2793.0  |
| 2020               | 40              | 2717.5  |
| 2021               | 40              | 2664.6  |
| 2022               | 40              | 2626.6  |
| 2023               | 40              | 2601.8  |
| 2024               | 40              | 2600.2  |
| 2025               | 40              | 2595.9  |
| 2026               | 40              | 2586.6  |
| 2027               | 40              | 2573.2  |
| 2028               | 40              | 2563.6  |
| 2029               | 40              | 2575.2  |
| 2030               | 40              | 2452.0  |
| 2031               | 21              | 1301.6  |
| 2032               | 5               | 336.7   |
| <b>Subtotal</b>    | <b>680</b>      | <b>51093.2</b>  |

**Annual Funding TY\$ - F-35 Aircraft  
1205 | MILCON | Military Construction,  
Navy and Marine Corps**

| <b>Fiscal Year</b> | <b>Total Program TY \$M</b> |
|--------------------|-----------------------------|
| 2004               | 24.4                        |
| 2005               | --                          |
| 2006               | 0.1                         |
| 2007               | --                          |
| 2008               | 0.2                         |
| 2009               | 0.7                         |
| 2010               | 34.1                        |
| 2011               | 377.9                       |
| 2012               | 144.4                       |
| 2013               | 117.6                       |
| 2014               | 209.0                       |
| 2015               | 320.5                       |
| 2016               | 151.7                       |
| 2017               | 48.1                        |
| 2018               | --                          |
| 2019               | 169.7                       |
| 2020               | 175.8                       |
| 2021               | 105.2                       |
| 2022               | 79.8                        |
| 2023               | --                          |
| 2024               | 300.1                       |
| <b>Subtotal</b>    | <b>2259.3</b>               |

**Annual Funding BY\$ - F-35 Aircraft  
1205 | MILCON | Military Construction,  
Navy and Marine Corps**

| <b>Fiscal Year</b> | <b>Total Program BY 2012 \$M</b> |
|--------------------|----------------------------------|
| 2004               | 27.8                             |
| 2005               | --                               |
| 2006               | 0.1                              |
| 2007               | --                               |
| 2008               | 0.2                              |
| 2009               | 0.7                              |
| 2010               | 34.0                             |
| 2011               | 366.3                            |
| 2012               | 137.3                            |
| 2013               | 109.7                            |
| 2014               | 191.4                            |
| 2015               | 288.0                            |
| 2016               | 133.8                            |
| 2017               | 41.6                             |
| 2018               | --                               |
| 2019               | 141.4                            |
| 2020               | 143.8                            |
| 2021               | 84.4                             |
| 2022               | 62.9                             |
| 2023               | --                               |
| 2024               | 227.6                            |
| <b>Subtotal</b>    | <b>1991.0</b>                    |

All Department of Navy MILCON funding is reflected in the Aircraft subprogram.

**Annual Funding TY\$ - F-35 Aircraft  
3300 | MILCON | Military Construction, Air  
Force**

| <b>Fiscal<br/>Year</b> | <b>Total<br/>Program<br/>TY \$M</b> |
|------------------------|-------------------------------------|
| 2004                   | 1.7                                 |
| 2005                   | 10.0                                |
| 2006                   | --                                  |
| 2007                   | --                                  |
| 2008                   | 100.3                               |
| 2009                   | 116.0                               |
| 2010                   | 125.1                               |
| 2011                   | 139.6                               |
| 2012                   | 24.3                                |
| 2013                   | 13.5                                |
| 2014                   | 41.9                                |
| 2015                   | 72.1                                |
| 2016                   | 65.0                                |
| 2017                   | 66.2                                |
| 2018                   | 11.0                                |
| 2019                   | 91.5                                |
| 2020                   | 134.6                               |
| 2021                   | 66.6                                |
| 2022                   | 73.1                                |
| 2023                   | 167.0                               |
| 2024                   | 142.3                               |
| 2025                   | 122.1                               |
| 2026                   | 118.4                               |
| 2027                   | 129.9                               |
| 2028                   | 101.8                               |
| 2029                   | 102.7                               |
| 2030                   | 94.6                                |
| 2031                   | 71.7                                |
| 2032                   | 71.2                                |
| 2033                   | 37.5                                |

|                 |               |
|-----------------|---------------|
| 2034            | 24.8          |
| 2035            | 4.4           |
| <b>Subtotal</b> | <b>2340.9</b> |

**Annual Funding BY\$ - F-35 Aircraft  
3300 | MILCON | Military Construction, Air  
Force**

| <b>Fiscal<br/>Year</b> | <b>Total<br/>Program<br/>BY 2012 \$M</b> |
|------------------------|--|
| 2004                   | 1.9                                      |
| 2005                   | 11.1                                     |
| 2006                   | --                                       |
| 2007                   | --                                       |
| 2008                   | 104.1                                    |
| 2009                   | 118.8                                    |
| 2010                   | 124.7                                    |
| 2011                   | 135.3                                    |
| 2012                   | 23.1                                     |
| 2013                   | 12.6                                     |
| 2014                   | 38.4                                     |
| 2015                   | 64.8                                     |
| 2016                   | 57.3                                     |
| 2017                   | 57.3                                     |
| 2018                   | 9.3                                      |
| 2019                   | 76.3                                     |
| 2020                   | 110.1                                    |
| 2021                   | 53.5                                     |
| 2022                   | 57.6                                     |
| 2023                   | 129.1                                    |
| 2024                   | 107.9                                    |
| 2025                   | 90.9                                     |
| 2026                   | 86.5                                     |
| 2027                   | 93.1                                     |
| 2028                   | 71.6                                     |
| 2029                   | 70.9                                     |
| 2030                   | 64.1                                     |
| 2031                   | 47.7                                     |
| 2032                   | 46.5                                     |
| 2033                   | 24.0                                     |



|                 |               |
|-----------------|---------------|
| 2034            | 15.6          |
| 2035            | 2.7           |
| <b>Subtotal</b> | <b>1906.8</b> |

All Air Force F-35 MILCON funding is reflected in the Aircraft subprogram.

## Annual Funding By Appropriation - F-35 Engine

### Annual Funding TY\$ - F-35 Engine

#### 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

| Fiscal Year     | Quantity | End Item Recurring Flyaway TY \$M | Non End Item Recurring Flyaway TY \$M | Non Recurring Flyaway TY \$M | Total Flyaway TY \$M | Total Support TY \$M | Total Program TY \$M |
|-----------------|----------|-----------------------------------|---------------------------------------|------------------------------|----------------------|----------------------|----------------------|
| 1995            | --       | --                                | --                                    | --                           | --                   | --                   | 16.4                 |
| 1996            | --       | --                                | --                                    | --                           | --                   | --                   | 15.9                 |
| 1997            | --       | --                                | --                                    | --                           | --                   | --                   | 49.3                 |
| 1998            | --       | --                                | --                                    | --                           | --                   | --                   | 87.1                 |
| 1999            | --       | --                                | --                                    | --                           | --                   | --                   | 89.4                 |
| 2000            | --       | --                                | --                                    | --                           | --                   | --                   | 48.8                 |
| 2001            | --       | --                                | --                                    | --                           | --                   | --                   | 66.9                 |
| 2002            | --       | --                                | --                                    | --                           | --                   | --                   | 408.4                |
| 2003            | --       | --                                | --                                    | --                           | --                   | --                   | 398.6                |
| 2004            | --       | --                                | --                                    | --                           | --                   | --                   | 383.6                |
| 2005            | --       | --                                | --                                    | --                           | --                   | --                   | 551.4                |
| 2006            | --       | --                                | --                                    | --                           | --                   | --                   | 579.6                |
| 2007            | --       | --                                | --                                    | --                           | --                   | --                   | 433.2                |
| 2008            | --       | --                                | --                                    | --                           | --                   | --                   | 585.2                |
| 2009            | --       | --                                | --                                    | --                           | --                   | --                   | 535.8                |
| 2010            | --       | --                                | --                                    | --                           | --                   | --                   | 463.2                |
| 2011            | --       | --                                | --                                    | --                           | --                   | --                   | 216.4                |
| 2012            | --       | --                                | --                                    | --                           | --                   | --                   | 102.6                |
| 2013            | --       | --                                | --                                    | --                           | --                   | --                   | 178.8                |
| 2014            | --       | --                                | --                                    | --                           | --                   | --                   | 199.9                |
| 2015            | --       | --                                | --                                    | --                           | --                   | --                   | 83.8                 |
| 2016            | --       | --                                | --                                    | --                           | --                   | --                   | 51.7                 |
| 2017            | --       | --                                | --                                    | --                           | --                   | --                   | 1.7                  |
| <b>Subtotal</b> | <b>5</b> | --                                | --                                    | --                           | --                   | --                   | <b>5547.7</b>        |

## Annual Funding BY\$ - F-35 Engine

## 3600 | RDT&amp;E | Research, Development, Test, and Evaluation, Air Force

| Fiscal Year     | Quantity | End Item<br>Recurring<br>Flyaway<br>BY 2012 \$M | Non End<br>Item<br>Recurring<br>Flyaway<br>BY 2012 \$M | Non<br>Recurring<br>Flyaway<br>BY 2012 \$M | Total<br>Flyaway<br>BY 2012 \$M | Total<br>Support<br>BY 2012 \$M | Total<br>Program<br>BY 2012 \$M |
|-----------------|----------|---|--|--|---------------------------------|---------------------------------|---------------------------------|
| 1995            | --       | --  | --   | --   | --                              | --                              | 21.7                            |
| 1996            | --       | --  | --   | --   | --                              | --                              | 20.6                            |
| 1997            | --       | --  | --   | --   | --                              | --                              | 63.2                            |
| 1998            | --       | --  | --   | --   | --                              | --                              | 110.8                           |
| 1999            | --       | --  | --   | --   | --                              | --                              | 112.4                           |
| 2000            | --       | --  | --   | --   | --                              | --                              | 60.5                            |
| 2001            | --       | --  | --   | --   | --                              | --                              | 81.8                            |
| 2002            | --       | --  | --   | --   | --                              | --                              | 494.3                           |
| 2003            | --       | --  | --   | --   | --                              | --                              | 475.5                           |
| 2004            | --       | --  | --   | --   | --                              | --                              | 445.2                           |
| 2005            | --       | --  | --   | --   | --                              | --                              | 623.5                           |
| 2006            | --       | --  | --   | --   | --                              | --                              | 635.6                           |
| 2007            | --       | --  | --   | --   | --                              | --                              | 463.7                           |
| 2008            | --       | --  | --   | --   | --                              | --                              | 615.2                           |
| 2009            | --       | --  | --   | --   | --                              | --                              | 556.1                           |
| 2010            | --       | --  | --   | --   | --                              | --                              | 473.6                           |
| 2011            | --       | --  | --   | --   | --                              | --                              | 215.6                           |
| 2012            | --       | --  | --   | --   | --                              | --                              | 100.2                           |
| 2013            | --       | --  | --   | --   | --                              | --                              | 171.3                           |
| 2014            | --       | --  | --   | --   | --                              | --                              | 188.0                           |
| 2015            | --       | --  | --   | --   | --                              | --                              | 77.3                            |
| 2016            | --       | --  | --   | --   | --                              | --                              | 46.8                            |
| 2017            | --       | --  | --   | --   | --                              | --                              | 1.5                             |
| <b>Subtotal</b> | <b>5</b> | --  | --   | --   | --                              | --                              | <b>6054.4</b>                   |

## Annual Funding TY\$ - F-35 Engine

## 1319 | RDT&amp;E | Research, Development, Test, and Evaluation, Navy

| Fiscal Year     | Quantity | End Item Recurring Flyaway TY \$M | Non End Item Recurring Flyaway TY \$M | Non Recurring Flyaway TY \$M | Total Flyaway TY \$M | Total Support TY \$M | Total Program TY \$M |
|-----------------|----------|-----------------------------------|---------------------------------------|------------------------------|----------------------|----------------------|----------------------|
| 1994            | --       | --                                | --                                    | --                           | --                   | --                   | 5.8                  |
| 1995            | --       | --                                | --                                    | --                           | --                   | --                   | 19.3                 |
| 1996            | --       | --                                | --                                    | --                           | --                   | --                   | 15.8                 |
| 1997            | --       | --                                | --                                    | --                           | --                   | --                   | 47.7                 |
| 1998            | --       | --                                | --                                    | --                           | --                   | --                   | 87.8                 |
| 1999            | --       | --                                | --                                    | --                           | --                   | --                   | 92.4                 |
| 2000            | --       | --                                | --                                    | --                           | --                   | --                   | 46.7                 |
| 2001            | --       | --                                | --                                    | --                           | --                   | --                   | 66.9                 |
| 2002            | --       | --                                | --                                    | --                           | --                   | --                   | 350.4                |
| 2003            | --       | --                                | --                                    | --                           | --                   | --                   | 550.8                |
| 2004            | --       | --                                | --                                    | --                           | --                   | --                   | 533.2                |
| 2005            | --       | --                                | --                                    | --                           | --                   | --                   | 573.5                |
| 2006            | --       | --                                | --                                    | --                           | --                   | --                   | 528.1                |
| 2007            | --       | --                                | --                                    | --                           | --                   | --                   | 639.1                |
| 2008            | --       | --                                | --                                    | --                           | --                   | --                   | 563.9                |
| 2009            | --       | --                                | --                                    | --                           | --                   | --                   | 433.1                |
| 2010            | --       | --                                | --                                    | --                           | --                   | --                   | 445.7                |
| 2011            | --       | --                                | --                                    | --                           | --                   | --                   | 252.9                |
| 2012            | --       | --                                | --                                    | --                           | --                   | --                   | 189.1                |
| 2013            | --       | --                                | --                                    | --                           | --                   | --                   | 179.3                |
| 2014            | --       | --                                | --                                    | --                           | --                   | --                   | 200.6                |
| 2015            | --       | --                                | --                                    | --                           | --                   | --                   | 84.5                 |
| 2016            | --       | --                                | --                                    | --                           | --                   | --                   | 52.5                 |
| 2017            | --       | --                                | --                                    | --                           | --                   | --                   | 2.2                  |
| 2018            | --       | --                                | --                                    | --                           | --                   | --                   | 0.8                  |
| <b>Subtotal</b> | <b>9</b> | --                                | --                                    | --                           | --                   | --                   | <b>5962.1</b>        |

## Annual Funding BY\$ - F-35 Engine

## 1319 | RDT&amp;E | Research, Development, Test, and Evaluation, Navy

| Fiscal Year     | Quantity | End Item<br>Recurring<br>Flyaway<br>BY 2012 \$M | Non End<br>Item<br>Recurring<br>Flyaway<br>BY 2012 \$M | Non<br>Recurring<br>Flyaway<br>BY 2012 \$M | Total<br>Flyaway<br>BY 2012 \$M | Total<br>Support<br>BY 2012 \$M | Total<br>Program<br>BY 2012 \$M |
|-----------------|----------|---|--|--|---------------------------------|---------------------------------|---------------------------------|
| 1994            | --       | --  | --   | --   | --                              | --                              | 7.8                             |
| 1995            | --       | --  | --   | --   | --                              | --                              | 25.5                            |
| 1996            | --       | --  | --   | --   | --                              | --                              | 20.5                            |
| 1997            | --       | --  | --   | --   | --                              | --                              | 61.2                            |
| 1998            | --       | --  | --   | --   | --                              | --                              | 111.7                           |
| 1999            | --       | --  | --   | --   | --                              | --                              | 116.2                           |
| 2000            | --       | --  | --   | --   | --                              | --                              | 57.9                            |
| 2001            | --       | --  | --   | --   | --                              | --                              | 81.8                            |
| 2002            | --       | --  | --   | --   | --                              | --                              | 424.1                           |
| 2003            | --       | --  | --   | --   | --                              | --                              | 657.1                           |
| 2004            | --       | --  | --   | --   | --                              | --                              | 618.8                           |
| 2005            | --       | --  | --   | --   | --                              | --                              | 648.5                           |
| 2006            | --       | --  | --   | --   | --                              | --                              | 579.1                           |
| 2007            | --       | --  | --   | --   | --                              | --                              | 684.1                           |
| 2008            | --       | --  | --   | --   | --                              | --                              | 592.8                           |
| 2009            | --       | --  | --   | --   | --                              | --                              | 449.5                           |
| 2010            | --       | --  | --   | --   | --                              | --                              | 455.7                           |
| 2011            | --       | --  | --   | --   | --                              | --                              | 252.0                           |
| 2012            | --       | --  | --   | --   | --                              | --                              | 184.8                           |
| 2013            | --       | --  | --   | --   | --                              | --                              | 171.8                           |
| 2014            | --       | --  | --   | --   | --                              | --                              | 188.6                           |
| 2015            | --       | --  | --   | --   | --                              | --                              | 78.0                            |
| 2016            | --       | --  | --   | --   | --                              | --                              | 47.5                            |
| 2017            | --       | --  | --   | --   | --                              | --                              | 2.0                             |
| 2018            | --       | --  | --   | --   | --                              | --                              | 0.7                             |
| <b>Subtotal</b> | <b>9</b> | --  | --   | --   | --                              | --                              | <b>6517.7</b>                   |

## Annual Funding TY\$ - F-35 Engine

## 0400 | RDT&amp;E | Research, Development, Test, and Evaluation, Defense-Wide

| Fiscal Year     | Quantity | End Item Recurring Flyaway TY \$M | Non End Item Recurring Flyaway TY \$M | Non Recurring Flyaway TY \$M | Total Flyaway TY \$M | Total Support TY \$M | Total Program TY \$M |
|-----------------|----------|-----------------------------------|---------------------------------------|------------------------------|----------------------|----------------------|----------------------|
| 1996            | --       | --                                | --                                    | --                           | --                   | --                   | 5.7                  |
| 1997            | --       | --                                | --                                    | --                           | --                   | --                   | 13.4                 |
| 1998            | --       | --                                | --                                    | --                           | --                   | --                   | 4.0                  |
| <b>Subtotal</b> | --       | --                                | --                                    | --                           | --                   | --                   | <b>23.1</b>          |

## Annual Funding BY\$ - F-35 Engine

## 0400 | RDT&amp;E | Research, Development, Test, and Evaluation, Defense-Wide

| Fiscal Year     | Quantity | End Item Recurring Flyaway<br>BY 2012 \$M | Non End Item Recurring Flyaway<br>BY 2012 \$M | Non Recurring Flyaway<br>BY 2012 \$M | Total Flyaway<br>BY 2012 \$M | Total Support<br>BY 2012 \$M | Total Program<br>BY 2012 \$M |
|-----------------|----------|---|---|--------------------------------------|------------------------------|------------------------------|------------------------------|
| 1996            | --       | --  | --  | --                                   | --                           | --                           | 7.4                          |
| 1997            | --       | --  | --  | --                                   | --                           | --                           | 17.2                         |
| 1998            | --       | --  | --  | --                                   | --                           | --                           | 5.1                          |
| <b>Subtotal</b> | --       | --  | --  | --                                   | --                           | --                           | <b>29.7</b>                  |

**Annual Funding TY\$ - F-35 Engine  
9999 | RDT&E | Non Treasury Funds**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item<br/>Recurring<br/>Flyaway<br/>TY \$M</b> | <b>Non End<br/>Item<br/>Recurring<br/>Flyaway<br/>TY \$M</b> | <b>Non<br/>Recurring<br/>Flyaway<br/>TY \$M</b> | <b>Total<br/>Flyaway<br/>TY \$M</b> | <b>Total<br/>Support<br/>TY \$M</b> | <b>Total<br/>Program<br/>TY \$M</b> |
|--------------------|-----------------|--|--|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1996               | --              | --   | --   | --  | --                                  | --                                  | 2.7                                 |
| 1997               | --              | --   | --   | --  | --                                  | --                                  | 3.9                                 |
| 1998               | --              | --   | --   | --  | --                                  | --                                  | 5.1                                 |
| 1999               | --              | --   | --   | --  | --                                  | --                                  | 5.7                                 |
| 2000               | --              | --   | --   | --  | --                                  | --                                  | 1.8                                 |
| 2001               | --              | --   | --   | --  | --                                  | --                                  | 0.5                                 |
| 2002               | --              | --   | --   | --  | --                                  | --                                  | 43.3                                |
| 2003               | --              | --   | --   | --  | --                                  | --                                  | 115.3                               |
| 2004               | --              | --   | --   | --  | --                                  | --                                  | 54.1                                |
| 2005               | --              | --   | --   | --  | --                                  | --                                  | 2.9                                 |
| 2006               | --              | --   | --   | --  | --                                  | --                                  | --                                  |
| 2007               | --              | --   | --   | --  | --                                  | --                                  | 54.0                                |
| <b>Subtotal</b>    | --              | --   | --   | --  | --                                  | --                                  | <b>289.3</b>                        |



**Annual Funding BY\$ - F-35 Engine  
9999 | RDT&E | Non Treasury Funds**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item<br/>Recurring<br/>Flyaway<br/>BY 2012 \$M</b> | <b>Non End<br/>Item<br/>Recurring<br/>Flyaway<br/>BY 2012 \$M</b> | <b>Non<br/>Recurring<br/>Flyaway<br/>BY 2012 \$M</b> | <b>Total<br/>Flyaway<br/>BY 2012 \$M</b> | <b>Total<br/>Support<br/>BY 2012 \$M</b> | <b>Total<br/>Program<br/>BY 2012 \$M</b> |
|--------------------|-----------------|---|---|--|--|--|--|
| 1996               | --              | --  | --  | --   | --                                       | --                                       | 3.5                                      |
| 1997               | --              | --  | --  | --   | --                                       | --                                       | 5.0                                      |
| 1998               | --              | --  | --  | --   | --                                       | --                                       | 6.5                                      |
| 1999               | --              | --  | --  | --   | --                                       | --                                       | 7.2                                      |
| 2000               | --              | --  | --  | --   | --                                       | --                                       | 2.2                                      |
| 2001               | --              | --  | --  | --   | --                                       | --                                       | 0.6                                      |
| 2002               | --              | --  | --  | --   | --                                       | --                                       | 52.4                                     |
| 2003               | --              | --  | --  | --   | --                                       | --                                       | 137.5                                    |
| 2004               | --              | --  | --  | --   | --                                       | --                                       | 62.8                                     |
| 2005               | --              | --  | --  | --   | --                                       | --                                       | 3.3                                      |
| 2006               | --              | --  | --  | --   | --                                       | --                                       | --                                       |
| 2007               | --              | --  | --  | --   | --                                       | --                                       | 57.8                                     |
| <b>Subtotal</b>    | --              | --  | --  | --   | --                                       | --                                       | <b>338.8</b>                             |

**Annual Funding TY\$ - F-35 Engine**  
**3010 | Procurement | Aircraft Procurement, Air Force**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway TY \$M</b> | <b>Non End Item Recurring Flyaway TY \$M</b> | <b>Non Recurring Flyaway TY \$M</b> | <b>Total Flyaway TY \$M</b> | <b>Total Support TY \$M</b> | <b>Total Program TY \$M</b> |
|--------------------|-----------------|--|--|-------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| 2006               | --              | 9.8                                      | --   | --                                  | 9.8                         | --                          | 9.8                         |
| 2007               | 2               | 47.5                                     | --   | 6.9                                 | 54.4                        | 27.7                        | 82.1                        |
| 2008               | 6               | 123.6                                    | --   | 35.0                                | 158.6                       | 30.9                        | 189.5                       |
| 2009               | 7               | 127.0                                    | --   | 63.9                                | 190.9                       | 33.3                        | 224.2                       |
| 2010               | 10              | 176.7                                    | --   | 72.6                                | 249.3                       | 59.1                        | 308.4                       |
| 2011               | 22              | 353.2                                    | --   | 91.6                                | 444.8                       | 136.6                       | 581.4                       |
| 2012               | 18              | 275.3                                    | --   | 66.0                                | 341.3                       | 123.0                       | 464.3                       |
| 2013               | 19              | 288.0                                    | --   | 98.5                                | 386.5                       | 110.3                       | 496.8                       |
| 2014               | 19              | 282.1                                    | --   | 31.2                                | 313.3                       | 118.5                       | 431.8                       |
| 2015               | 30              | 421.1                                    | --   | 18.5                                | 439.6                       | 147.7                       | 587.3                       |
| 2016               | 44              | 569.5                                    | --   | 32.9                                | 602.4                       | 195.8                       | 798.2                       |
| 2017               | 48              | 613.7                                    | --   | 53.8                                | 667.5                       | 170.0                       | 837.5                       |
| 2018               | 60              | 743.2                                    | --   | 46.6                                | 789.8                       | 210.4                       | 1000.2                      |
| 2019               | 60              | 729.0                                    | --   | 31.4                                | 760.4                       | 211.4                       | 971.8                       |
| 2020               | 60              | 756.8                                    | --   | 31.2                                | 788.0                       | 201.8                       | 989.8                       |
| 2021               | 80              | 982.4                                    | --   | 41.1                                | 1023.5                      | 244.4                       | 1267.9                      |
| 2022               | 80              | 998.6                                    | --   | 41.0                                | 1039.6                      | 227.4                       | 1267.0                      |
| 2023               | 80              | 1025.2                                   | --   | 42.7                                | 1067.9                      | 251.4                       | 1319.3                      |
| 2024               | 80              | 1047.2                                   | --   | 42.8                                | 1090.0                      | 236.5                       | 1326.5                      |
| 2025               | 80              | 1075.3                                   | --   | 43.5                                | 1118.8                      | 225.0                       | 1343.8                      |
| 2026               | 80              | 1102.7                                   | --   | 45.0                                | 1147.7                      | 236.6                       | 1384.3                      |
| 2027               | 80              | 1124.1                                   | --   | 45.7                                | 1169.8                      | 240.6                       | 1410.4                      |
| 2028               | 80              | 1147.0                                   | --   | 45.3                                | 1192.3                      | 195.6                       | 1387.9                      |
| 2029               | 80              | 1170.8                                   | --   | 47.1                                | 1217.9                      | 237.4                       | 1455.3                      |
| 2030               | 80              | 1196.6                                   | --   | 47.4                                | 1244.0                      | 237.5                       | 1481.5                      |
| 2031               | 80              | 1234.9                                   | --   | 49.6                                | 1284.5                      | 260.7                       | 1545.2                      |
| 2032               | 80              | 1278.1                                   | --   | 49.0                                | 1327.1                      | 189.4                       | 1516.5                      |
| 2033               | 80              | 1320.9                                   | --   | 50.5                                | 1371.4                      | 161.8                       | 1533.2                      |
| 2034               | 80              | 1351.2                                   | --   | 50.5                                | 1401.7                      | 115.0                       | 1516.7                      |
| 2035               | 80              | 1382.6                                   | --   | 51.6                                | 1434.2                      | 115.4                       | 1549.6                      |

|                 |             |                |           |               |                |               |                |
|-----------------|-------------|----------------|-----------|---------------|----------------|---------------|----------------|
| 2036            | 80          | 1413.4         | --        | 52.2          | 1465.6         | 99.3          | 1564.9         |
| 2037            | 78          | 1272.6         | --        | 52.8          | 1325.4         | 101.8         | 1427.2         |
| <b>Subtotal</b> | <b>1763</b> | <b>25640.1</b> | <b>--</b> | <b>1477.9</b> | <b>27118.0</b> | <b>5152.3</b> | <b>32270.3</b> |

**Annual Funding BY\$ - F-35 Engine**  
**3010 | Procurement | Aircraft Procurement, Air Force**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non Recurring Flyaway BY 2012 \$M</b> | <b>Total Flyaway BY 2012 \$M</b> | <b>Total Support BY 2012 \$M</b> | <b>Total Program BY 2012 \$M</b> |
|--------------------|-----------------|---|---|--|----------------------------------|----------------------------------|----------------------------------|
| 2006               | --              | 10.6  | --  | --                                       | 10.6                             | --                               | 10.6                             |
| 2007               | 2               | 50.2  | --  | 7.3                                      | 57.5                             | 29.2                             | 86.7                             |
| 2008               | 6               | 128.6   | --  | 36.4                                     | 165.0                            | 32.2                             | 197.2                            |
| 2009               | 7               | 130.3   | --  | 65.5                                     | 195.8                            | 34.2                             | 230.0                            |
| 2010               | 10              | 177.2   | --  | 72.9                                     | 250.1                            | 59.2                             | 309.3                            |
| 2011               | 22              | 345.9   | --  | 89.7                                     | 435.6                            | 133.8                            | 569.4                            |
| 2012               | 18              | 264.5   | --  | 63.4                                     | 327.9                            | 118.1                            | 446.0                            |
| 2013               | 19              | 271.4   | --  | 92.9                                     | 364.3                            | 103.9                            | 468.2                            |
| 2014               | 19              | 260.9   | --  | 28.9                                     | 289.8                            | 109.6                            | 399.4                            |
| 2015               | 30              | 382.2   | --  | 16.8                                     | 399.0                            | 134.1                            | 533.1                            |
| 2016               | 44              | 507.3   | --  | 29.3                                     | 536.6                            | 174.4                            | 711.0                            |
| 2017               | 48              | 536.5   | --  | 47.0                                     | 583.5                            | 148.6                            | 732.1                            |
| 2018               | 60              | 637.6   | --  | 40.0                                     | 677.6                            | 180.4                            | 858.0                            |
| 2019               | 60              | 613.7   | --  | 26.4                                     | 640.1                            | 178.0                            | 818.1                            |
| 2020               | 60              | 625.2   | --  | 25.8                                     | 651.0                            | 166.7                            | 817.7                            |
| 2021               | 80              | 796.5   | --  | 33.3                                     | 829.8                            | 198.2                            | 1028.0                           |
| 2022               | 80              | 794.5   | --  | 32.6                                     | 827.1                            | 181.0                            | 1008.1                           |
| 2023               | 80              | 800.5   | --  | 33.3                                     | 833.8                            | 196.3                            | 1030.1                           |
| 2024               | 80              | 802.4   | --  | 32.8                                     | 835.2                            | 181.2                            | 1016.4                           |
| 2025               | 80              | 808.6   | --  | 32.7                                     | 841.3                            | 169.2                            | 1010.5                           |
| 2026               | 80              | 813.7   | --  | 33.2                                     | 846.9                            | 174.6                            | 1021.5                           |
| 2027               | 80              | 814.1   | --  | 33.1                                     | 847.2                            | 174.2                            | 1021.4                           |
| 2028               | 80              | 815.2   | --  | 32.2                                     | 847.4                            | 139.0                            | 986.4                            |
| 2029               | 80              | 816.6   | --  | 32.8                                     | 849.4                            | 165.6                            | 1015.0                           |
| 2030               | 80              | 819.0   | --  | 32.4                                     | 851.4                            | 162.6                            | 1014.0                           |
| 2031               | 80              | 829.4   | --  | 33.3                                     | 862.7                            | 175.2                            | 1037.9                           |
| 2032               | 80              | 842.4   | --  | 32.3                                     | 874.7                            | 124.9                            | 999.6                            |
| 2033               | 80              | 854.4   | --  | 32.7                                     | 887.1                            | 104.7                            | 991.8                            |
| 2034               | 80              | 857.7   | --  | 32.1                                     | 889.8                            | 73.0                             | 962.8                            |
| 2035               | 80              | 861.3   | --  | 32.1                                     | 893.4                            | 71.9                             | 965.3                            |

|                 |             |                |           |               |                |               |                |
|-----------------|-------------|----------------|-----------|---------------|----------------|---------------|----------------|
| 2036            | 80          | 864.1          | --        | 31.9          | 896.0          | 60.7          | 956.7          |
| 2037            | 78          | 763.5          | --        | 31.7          | 795.2          | 61.0          | 856.2          |
| <b>Subtotal</b> | <b>1763</b> | <b>18896.0</b> | <b>--</b> | <b>1196.8</b> | <b>20092.8</b> | <b>4015.7</b> | <b>24108.5</b> |

**Cost Quantity Information - F-35 Engine**  
**3010 | Procurement | Aircraft Procurement, Air Force**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item<br/>Recurring<br/>Flyaway<br/>(Aligned<br/>with<br/>Quantity)<br/>BY 2012<br/>\$M</b> |
|--------------------|-----------------|---|
| 2006               | --              | --  |
| 2007               | 2               | 50.2  |
| 2008               | 6               | 128.6   |
| 2009               | 7               | 130.3   |
| 2010               | 10              | 177.2   |
| 2011               | 22              | 345.9   |
| 2012               | 18              | 264.5   |
| 2013               | 19              | 271.4   |
| 2014               | 19              | 260.9   |
| 2015               | 30              | 382.2   |
| 2016               | 44              | 507.3   |
| 2017               | 48              | 536.5   |
| 2018               | 60              | 637.6   |
| 2019               | 60              | 613.7   |
| 2020               | 60              | 625.2   |
| 2021               | 80              | 796.5   |
| 2022               | 80              | 794.5   |
| 2023               | 80              | 800.5   |
| 2024               | 80              | 802.4   |
| 2025               | 80              | 808.6   |
| 2026               | 80              | 813.7   |
| 2027               | 80              | 814.1   |
| 2028               | 80              | 815.2   |
| 2029               | 80              | 816.6   |
| 2030               | 80              | 819.0   |
| 2031               | 80              | 829.4   |
| 2032               | 80              | 842.4   |
| 2033               | 80              | 854.4   |

|                 |             |                |
|-----------------|-------------|----------------|
| 2034            | 80          | 857.7          |
| 2035            | 80          | 861.3          |
| 2036            | 80          | 869.1          |
| 2037            | 78          | 769.1          |
| <b>Subtotal</b> | <b>1763</b> | <b>18896.0</b> |

**Annual Funding TY\$ - F-35 Engine  
1506 | Procurement | Aircraft Procurement, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway TY \$M</b> | <b>Non End Item Recurring Flyaway TY \$M</b> | <b>Non Recurring Flyaway TY \$M</b> | <b>Total Flyaway TY \$M</b> | <b>Total Support TY \$M</b> | <b>Total Program TY \$M</b> |
|--------------------|-----------------|--|--|-------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| 2007               | --              | 27.4                                     | --   | --                                  | 27.4                        | --                          | 27.4                        |
| 2008               | 6               | 246.1                                    | --   | 1.3                                 | 247.4                       | 1.2                         | 248.6                       |
| 2009               | 7               | 298.0                                    | --   | 54.3                                | 352.3                       | 65.6                        | 417.9                       |
| 2010               | 20              | 599.0                                    | --   | 118.5                               | 717.5                       | 127.6                       | 845.1                       |
| 2011               | 10              | 400.5                                    | --   | 112.5                               | 513.0                       | 122.3                       | 635.3                       |
| 2012               | 13              | 191.4                                    | --   | 57.7                                | 249.1                       | 61.9                        | 311.0                       |
| 2013               | 10              | 297.1                                    | --   | 118.4                               | 415.5                       | 107.6                       | 523.1                       |
| 2014               | 10              | 277.2                                    | --   | 21.6                                | 298.8                       | 142.4                       | 441.2                       |
| 2015               | 12              | 300.7                                    | --   | 31.0                                | 331.7                       | 109.0                       | 440.7                       |
| 2016               | 18              | 432.5                                    | --   | 27.1                                | 459.6                       | 122.9                       | 582.5                       |
| 2017               | 28              | 634.4                                    | --   | 32.2                                | 666.6                       | 183.6                       | 850.2                       |
| 2018               | 40              | 816.7                                    | --   | 34.1                                | 850.8                       | 226.9                       | 1077.7                      |
| 2019               | 40              | 825.7                                    | --   | 100.0                               | 925.7                       | 164.5                       | 1090.2                      |
| 2020               | 40              | 824.1                                    | --   | 90.0                                | 914.1                       | 229.6                       | 1143.7                      |
| 2021               | 40              | 823.6                                    | --   | 80.0                                | 903.6                       | 256.8                       | 1160.4                      |
| 2022               | 40              | 831.5                                    | --   | 85.0                                | 916.5                       | 199.5                       | 1116.0                      |
| 2023               | 40              | 845.7                                    | --   | 85.0                                | 930.7                       | 199.9                       | 1130.6                      |
| 2024               | 40              | 866.2                                    | --   | 105.0                               | 971.2                       | 165.9                       | 1137.1                      |
| 2025               | 40              | 882.2                                    | --   | 95.0                                | 977.2                       | 171.6                       | 1148.8                      |
| 2026               | 40              | 896.6                                    | --   | 95.0                                | 991.6                       | 144.6                       | 1136.2                      |
| 2027               | 40              | 908.6                                    | --   | 65.0                                | 973.6                       | 88.7                        | 1062.3                      |
| 2028               | 40              | 923.0                                    | --   | 60.0                                | 983.0                       | 81.2                        | 1064.2                      |
| 2029               | 40              | 939.3                                    | --   | 62.0                                | 1001.3                      | 83.7                        | 1085.0                      |
| 2030               | 40              | 894.6                                    | --   | 55.0                                | 949.6                       | 67.0                        | 1016.6                      |
| 2031               | 21              | 319.3                                    | --   | 44.0                                | 363.3                       | 47.6                        | 410.9                       |
| 2032               | 5               | 71.8                                     | --   | 20.0                                | 91.8                        | 11.7                        | 103.5                       |
| <b>Subtotal</b>    | <b>680</b>      | <b>15373.2</b>                           | <b>--</b>                                    | <b>1649.7</b>                       | <b>17022.9</b>              | <b>3183.3</b>               | <b>20206.2</b>              |



**Annual Funding BY\$ - F-35 Engine**  
**1506 | Procurement | Aircraft Procurement, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non End Item Recurring Flyaway BY 2012 \$M</b> | <b>Non Recurring Flyaway BY 2012 \$M</b> | <b>Total Flyaway BY 2012 \$M</b> | <b>Total Support BY 2012 \$M</b> | <b>Total Program BY 2012 \$M</b> |
|--------------------|-----------------|---|---|--|----------------------------------|----------------------------------|----------------------------------|
| 2007               | --              | 28.9  | --  | --                                       | 28.9                             | --                               | 28.9                             |
| 2008               | 6               | 256.0   | --  | 1.4                                      | 257.4                            | 1.2                              | 258.6                            |
| 2009               | 7               | 305.7   | --  | 55.7                                     | 361.4                            | 67.3                             | 428.7                            |
| 2010               | 20              | 600.7   | --  | 118.9                                    | 719.6                            | 127.9                            | 847.5                            |
| 2011               | 10              | 392.2   | --  | 110.2                                    | 502.4                            | 119.8                            | 622.2                            |
| 2012               | 13              | 183.9   | --  | 55.5                                     | 239.4                            | 59.4                             | 298.8                            |
| 2013               | 10              | 280.0   | --  | 111.6                                    | 391.6                            | 101.4                            | 493.0                            |
| 2014               | 10              | 256.4   | --  | 20.0                                     | 276.4                            | 131.7                            | 408.1                            |
| 2015               | 12              | 272.9   | --  | 28.1                                     | 301.0                            | 99.0                             | 400.0                            |
| 2016               | 18              | 385.3   | --  | 24.1                                     | 409.4                            | 109.5                            | 518.9                            |
| 2017               | 28              | 554.6   | --  | 28.1                                     | 582.7                            | 160.5                            | 743.2                            |
| 2018               | 40              | 700.6   | --  | 29.3                                     | 729.9                            | 194.6                            | 924.5                            |
| 2019               | 40              | 695.1   | --  | 84.2                                     | 779.3                            | 138.5                            | 917.8                            |
| 2020               | 40              | 680.8   | --  | 74.4                                     | 755.2                            | 189.7                            | 944.9                            |
| 2021               | 40              | 667.7   | --  | 64.9                                     | 732.6                            | 208.2                            | 940.8                            |
| 2022               | 40              | 661.6   | --  | 67.6                                     | 729.2                            | 158.7                            | 887.9                            |
| 2023               | 40              | 660.3   | --  | 66.4                                     | 726.7                            | 156.1                            | 882.8                            |
| 2024               | 40              | 663.7   | --  | 80.5                                     | 744.2                            | 127.1                            | 871.3                            |
| 2025               | 40              | 663.4   | --  | 71.4                                     | 734.8                            | 129.1                            | 863.9                            |
| 2026               | 40              | 661.6   | --  | 70.2                                     | 731.8                            | 106.7                            | 838.5                            |
| 2027               | 40              | 658.0   | --  | 47.1                                     | 705.1                            | 64.2                             | 769.3                            |
| 2028               | 40              | 656.0   | --  | 42.6                                     | 698.6                            | 57.7                             | 756.3                            |
| 2029               | 40              | 655.1   | --  | 43.3                                     | 698.4                            | 58.3                             | 756.7                            |
| 2030               | 40              | 612.3   | --  | 37.6                                     | 649.9                            | 45.9                             | 695.8                            |
| 2031               | 21              | 214.5   | --  | 29.5                                     | 244.0                            | 32.0                             | 276.0                            |
| 2032               | 5               | 47.3  | --  | 13.2                                     | 60.5                             | 7.7                              | 68.2                             |
| <b>Subtotal</b>    | <b>680</b>      | <b>12414.6</b>                                | <b>--</b>   | <b>1375.8</b>                            | <b>13790.4</b>                   | <b>2652.2</b>                    | <b>16442.6</b>                   |

**Cost Quantity Information - F-35 Engine**  
**1506 | Procurement | Aircraft Procurement, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway (Aligned with Quantity) BY 2012 \$M</b> |
|--------------------|-----------------|---|
| 2007               | --              | --  |
| 2008               | 6               | 256.0   |
| 2009               | 7               | 305.7   |
| 2010               | 20              | 600.7   |
| 2011               | 10              | 392.2   |
| 2012               | 13              | 183.9   |
| 2013               | 10              | 280.0   |
| 2014               | 10              | 256.4   |
| 2015               | 12              | 272.9   |
| 2016               | 18              | 385.3   |
| 2017               | 28              | 554.6   |
| 2018               | 40              | 700.6   |
| 2019               | 40              | 695.1   |
| 2020               | 40              | 680.8   |
| 2021               | 40              | 667.7   |
| 2022               | 40              | 661.6   |
| 2023               | 40              | 660.3   |
| 2024               | 40              | 663.7   |
| 2025               | 40              | 663.4   |
| 2026               | 40              | 661.6   |
| 2027               | 40              | 658.0   |
| 2028               | 40              | 656.0   |
| 2029               | 40              | 655.1   |
| 2030               | 40              | 622.3   |
| 2031               | 21              | 224.5   |
| 2032               | 5               | 56.2  |
| <b>Subtotal</b>    | <b>680</b>      | <b>12414.6</b>  |

## Low Rate Initial Production

### F-35 Aircraft

|                          | Initial LRIP Decision                               | Current Total LRIP |
|--------------------------|---|--------------------|
| <b>Approval Date</b>     | 10/26/2001  | 2/24/2010          |
| <b>Approved Quantity</b> | 465   | 365                |
| <b>Reference</b>         | Original MS B Acquisition Decision Memorandum (ADM) | Restructure ADM    |
| <b>Start Year</b>        | 2006  | 2006               |
| <b>End Year</b>          | 2015  | 2018               |

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the necessity to prevent a break in production and to ramp up to full rate production.

The Defense Acquisition Executive approved the Low Rate Initial Production (LRIP) quantity of 465 (in six LRIP lots) in the original Milestone B ADM dated October 26, 2001. The LRIP quantity has been revised to 365 (in eleven LRIP lots) based on the FY 2012 National Defense Authorization Act and the FY 2013 President's Budget.

### F-35 Engine

|                          | Initial LRIP Decision                               | Current Total LRIP |
|--------------------------|---|--------------------|
| <b>Approval Date</b>     | 10/26/2001  | 2/24/2010          |
| <b>Approved Quantity</b> | 465   | 365                |
| <b>Reference</b>         | Original MS B Acquisition Decision Memorandum (ADM) | Restructure ADM    |
| <b>Start Year</b>        | 2006  | 2006               |
| <b>End Year</b>          | 2015  | 2018               |

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the necessity to prevent a break in production and to ramp up to full rate production.

The Defense Acquisition Executive approved the Low Rate Initial Production (LRIP) quantity of 465 (in six LRIP lots) in the original Milestone B ADM dated October 26, 2001. The LRIP quantity has been revised to 365 (in eleven LRIP lots) based on the FY 2012 National Defense Authorization Act and the FY 2013 President's Budget.

## Foreign Military Sales

### F-35 Aircraft

| Country | Date of Sale | Quantity | Total Cost \$M | Memo  |
|---------|--------------|----------|----------------|---|
| Japan   | 6/29/2012    | 4        | 701.2          | All four aircraft will be Conventional Take Off and Landing (CTOL) variant. There is an option to purchase 38 additional CTOLs. |
| Israel  | 9/30/2010    | 19       | 2623.3         | All 19 aircraft will be CTOL variant.   |

### F-35 Engine

Foreign Military Sales information for the F-35 Engine subprogram are reflected in the F-35 Aircraft subprogram.

## Nuclear Cost

### F-35 Aircraft

None

### F-35 Engine

None

## Unit Cost

### F-35 Aircraft

#### Unit Cost Report

|   | BY2012 \$M                                | BY2012 \$M                         |                |
|---|---|------------------------------------|----------------|
| Unit Cost                                   | Current UCR<br>Baseline<br>(MAR 2012 APB) | Current Estimate<br>(DEC 2012 SAR) | BY<br>% Change |
| <b>Program Acquisition Unit Cost (PAUC)</b> |   |                                    |                |
| Cost  | 276482.2                                  | 265934.3                           |                |
| Quantity                                    | 2458                                      | 2457                               |                |
| Unit Cost                                   | 112.483                                   | 108.235                            | -3.78          |
| <b>Average Procurement Unit Cost (APUC)</b> |   |                                    |                |
| Cost  | 224333.7                                  | 215579.0                           |                |
| Quantity                                    | 2443                                      | 2443                               |                |
| Unit Cost                                   | 91.827                                    | 88.244                             | -3.90          |

|   | BY2012 \$M  | BY2012 \$M                         |                |
|---|---|------------------------------------|----------------|
| Unit Cost                                   | Revised<br>Original UCR<br>Baseline<br>(MAR 2012 APB) | Current Estimate<br>(DEC 2012 SAR) | BY<br>% Change |
| <b>Program Acquisition Unit Cost (PAUC)</b> |   |                                    |                |
| Cost  | 276482.2  | 265934.3                           |                |
| Quantity                                    | 2458  | 2457                               |                |
| Unit Cost                                   | 112.483   | 108.235                            | -3.78          |
| <b>Average Procurement Unit Cost (APUC)</b> |   |                                    |                |
| Cost  | 224333.7  | 215579.0                           |                |
| Quantity                                    | 2443  | 2443                               |                |
| Unit Cost                                   | 91.827  | 88.244                             | -3.90          |

The DoD average F-35 Aircraft Unit Recurring Flyaway (URF) Cost consists of the Hardware (Airframe, Vehicle Systems, Mission Systems, and Engineering Change Order) costs over the life of the program. The URF assumes the quantity benefits of 61 Foreign Military Sales aircraft and 660 International Partner aircraft.

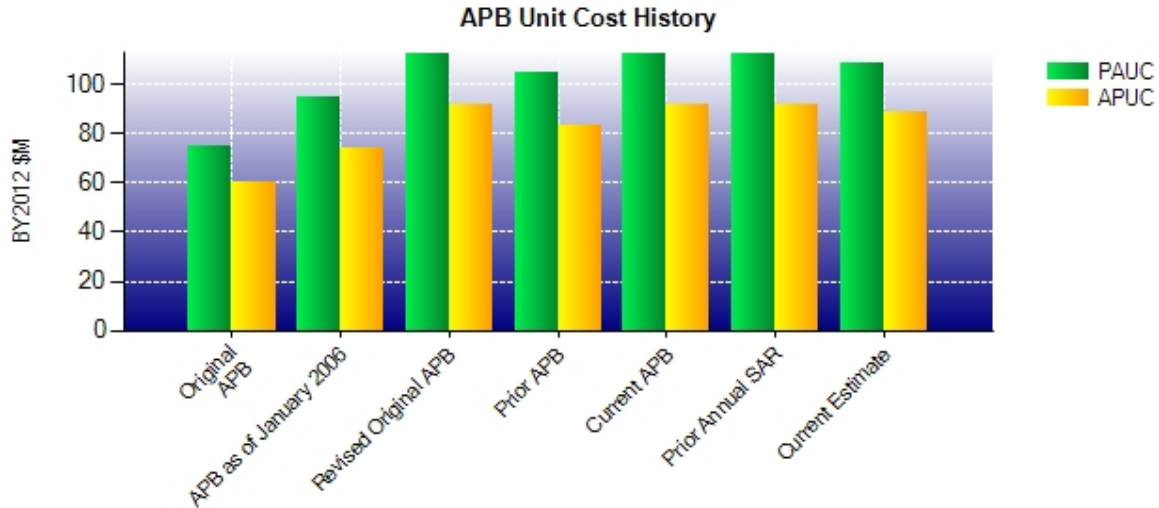
F-35A (Conventional Take Off and Landing) URF - \$65.9 M (BY 2012)

F-35B (Short Takeoff and Vertical Landing) URF - \$77.4M (BY 2012)

F-35C (Carrier Variant) URF - \$77.9 M (BY 2012)

## F-35 Aircraft

### Unit Cost History



|                        | Date     | BY2012 \$M |        | TY \$M  |         |
|------------------------|----------|------------|--------|---------|---------|
|                        |          | PAUC       | APUC   | PAUC    | APUC    |
| Original APB           | OCT 2001 | 74.567     | 60.632 | 81.298  | 68.934  |
| APB as of January 2006 | MAR 2004 | 94.837     | 73.845 | 100.407 | 81.826  |
| Revised Original APB   | MAR 2012 | 112.529    | 91.827 | 135.065 | 115.697 |
| Prior APB              | MAR 2007 | 104.363    | 83.467 | 113.318 | 94.857  |
| Current APB            | MAR 2012 | 112.529    | 91.827 | 135.065 | 115.697 |
| Prior Annual SAR       | DEC 2011 | 112.529    | 91.827 | 135.065 | 115.697 |
| Current Estimate       | DEC 2012 | 108.235    | 88.244 | 133.054 | 114.184 |

### SAR Unit Cost History

#### Current SAR Baseline to Current Estimate (TY \$M)

| Initial PAUC<br>Dev Est | Changes |       |       |       |        |       |        |        | PAUC<br>Current Est |
|-------------------------|---------|-------|-------|-------|--------|-------|--------|--------|---------------------|
|                         | Econ    | Qty   | Sch   | Eng   | Est    | Oth   | Spt    | Total  |                     |
| 135.065                 | 2.856   | 0.000 | 0.605 | 0.000 | -4.747 | 0.000 | -0.725 | -2.011 | 133.054             |

**Current SAR Baseline to Current Estimate (TY \$M)**

| Initial APUC<br>Dev Est | Changes |       |       |       |        |       |        |        | APUC<br>Current Est |
|-------------------------|---------|-------|-------|-------|--------|-------|--------|--------|---------------------|
|                         | Econ    | Qty   | Sch   | Eng   | Est    | Oth   | Spt    | Total  |                     |
| 115.697                 | 2.755   | 0.000 | 0.609 | 0.000 | -4.147 | 0.000 | -0.729 | -1.512 | 114.184             |

**SAR Baseline History**

| Item/Event                  | SAR<br>Planning<br>Estimate (PE) | SAR<br>Development<br>Estimate (DE) | SAR<br>Production<br>Estimate (PdE) | Current<br>Estimate |
|-----------------------------|----------------------------------|-------------------------------------|-------------------------------------|---------------------|
| Milestone I                 | N/A                              | NOV 1996                            | N/A                                 | NOV 1996            |
| Milestone B                 | MAR 2001                         | NOV 2011                            | N/A                                 | OCT 2001            |
| Milestone C                 | TBD                              | APR 2019                            | N/A                                 | APR 2019            |
| IOC                         | TBD                              | TBD                                 | N/A                                 | TBD                 |
| Total Cost (TY \$M)         | 24800.0                          | 331855.2                            | N/A                                 | 326912.8            |
| Total Quantity              | N/A                              | 2457                                | N/A                                 | 2457                |
| Prog. Acq. Unit Cost (PAUC) | N/A                              | 135.065                             | N/A                                 | 133.054             |

The Services are currently reviewing their Initial Operational Capabilities (IOC) based on the restructured F-35 Program. 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 (OT) and training requirements, and the number of aircraft they require for IOC. The Services have requested, with the support of the Department, waiting to establish an IOC date. The Services require more definition in the program schedule regarding IOC requirements, to include OT dates, before targeting a timeline. The program anticipates the Services will identify their IOC dates in 2013.

## F-35 Engine

### Unit Cost Report

|   | BY2012 \$M                                | BY2012 \$M                         |                |
|---|---|------------------------------------|----------------|
| Unit Cost                                   | Current UCR<br>Baseline<br>(MAR 2012 APB) | Current Estimate<br>(DEC 2012 SAR) | BY<br>% Change |
| <b>Program Acquisition Unit Cost (PAUC)</b> |   |                                    |                |
| Cost  | 53916.4                                   | 53491.7                            |                |
| Quantity                                    | 2458                                      | 2457                               |                |
| Unit Cost                                   | 21.935                                    | 21.771                             | -0.75          |
| <b>Average Procurement Unit Cost (APUC)</b> |   |                                    |                |
| Cost  | 42332.9                                   | 40551.1                            |                |
| Quantity                                    | 2443                                      | 2443                               |                |
| Unit Cost                                   | 17.328                                    | 16.599                             | -4.21          |

|   | BY2012 \$M                                 | BY2012 \$M                         |                |
|---|--|------------------------------------|----------------|
| Unit Cost                                   | Original UCR<br>Baseline<br>(MAR 2012 APB) | Current Estimate<br>(DEC 2012 SAR) | BY<br>% Change |
| <b>Program Acquisition Unit Cost (PAUC)</b> |  |                                    |                |
| Cost  | 53916.4                                    | 53491.7                            |                |
| Quantity                                    | 2458                                       | 2457                               |                |
| Unit Cost                                   | 21.935                                     | 21.771                             | -0.75          |
| <b>Average Procurement Unit Cost (APUC)</b> |  |                                    |                |
| Cost  | 42332.9                                    | 40551.1                            |                |
| Quantity                                    | 2443                                       | 2443                               |                |
| Unit Cost                                   | 17.328                                     | 16.599                             | -4.21          |

The DoD average F-35 Engine Unit Recurring Flyaway (URF) Cost consists of the Hardware (Propulsion and Engineering Change Order) costs over the life of the program. The URF assumes the quantity benefits of 61 Foreign Military Sales engines and 660 International Partner engines.

F-35A (Conventional Take Off and Landing) URF - \$10.9 M (BY 2012)

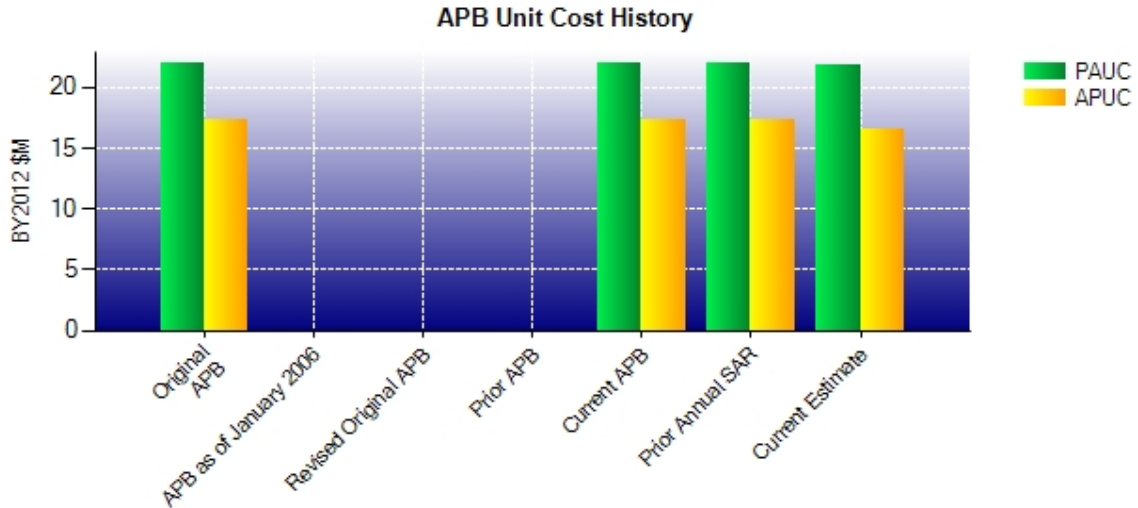
F-35B (Short Takeoff and Vertical Landing) URF - \$26.2 M (BY 2012)

F-35C (Carrier Variant) URF - \$10.8 M (BY 2012)



### F-35 Engine

### Unit Cost History



|                               | Date     | BY2012 \$M |        | TY \$M |        |
|-------------------------------|----------|------------|--------|--------|--------|
|                               |          | PAUC       | APUC   | PAUC   | APUC   |
| <b>Original APB</b>           | MAR 2012 | 21.989     | 17.328 | 25.990 | 21.708 |
| <b>APB as of January 2006</b> | N/A      | N/A        | N/A    | N/A    | N/A    |
| <b>Revised Original APB</b>   | N/A      | N/A        | N/A    | N/A    | N/A    |
| <b>Prior APB</b>              | N/A      | N/A        | N/A    | N/A    | N/A    |
| <b>Current APB</b>            | MAR 2012 | 21.989     | 17.328 | 25.990 | 21.708 |
| <b>Prior Annual SAR</b>       | DEC 2011 | 21.989     | 17.328 | 25.990 | 21.708 |
| <b>Current Estimate</b>       | DEC 2012 | 21.771     | 16.599 | 26.170 | 21.480 |

### SAR Unit Cost History

#### Current SAR Baseline to Current Estimate (TY \$M)

| Initial PAUC<br>Dev Est | Changes |       |       |       |        |       |        |       | PAUC<br>Current Est |
|-------------------------|---------|-------|-------|-------|--------|-------|--------|-------|---------------------|
|                         | Econ    | Qty   | Sch   | Eng   | Est    | Oth   | Spt    | Total |                     |
| 25.990                  | 0.530   | 0.000 | 0.110 | 0.000 | -0.259 | 0.000 | -0.201 | 0.180 | 26.170              |

**Current SAR Baseline to Current Estimate (TY \$M)**

| Initial APUC<br>Dev Est | Changes |       |       |       |        |       |        |        | APUC<br>Current Est |
|-------------------------|---------|-------|-------|-------|--------|-------|--------|--------|---------------------|
|                         | Econ    | Qty   | Sch   | Eng   | Est    | Oth   | Spt    | Total  |                     |
| 21.708                  | 0.515   | 0.000 | 0.111 | 0.000 | -0.652 | 0.000 | -0.202 | -0.228 | 21.480              |

**SAR Baseline History**

| Item/Event                  | SAR<br>Planning<br>Estimate (PE) | SAR<br>Development<br>Estimate (DE) | SAR<br>Production<br>Estimate (PdE) | Current<br>Estimate |
|-----------------------------|----------------------------------|-------------------------------------|-------------------------------------|---------------------|
| Milestone A                 | N/A                              | N/A                                 | N/A                                 | N/A                 |
| Milestone B                 | N/A                              | N/A                                 | N/A                                 | N/A                 |
| Milestone C                 | N/A                              | N/A                                 | N/A                                 | N/A                 |
| IOC                         | N/A                              | N/A                                 | N/A                                 | N/A                 |
| Total Cost (TY \$M)         | N/A                              | 63856.6                             | N/A                                 | 64298.7             |
| Total Quantity              | N/A                              | 2457                                | N/A                                 | 2457                |
| Prog. Acq. Unit Cost (PAUC) | N/A                              | 25.990                              | N/A                                 | 26.170              |

**Cost Variance****F-35 Aircraft**

| <b>Summary Then Year \$M</b> |                  |             |               |              |
|------------------------------|------------------|-------------|---------------|--------------|
|                              | <b>RDT&amp;E</b> | <b>Proc</b> | <b>MILCON</b> | <b>Total</b> |
| SAR Baseline (Dev Est)       | 44410.1          | 282647.8    | 4797.3        | 331855.2     |
| Previous Changes             |                  |             |               |              |
| Economic                     | --               | --          | --            | --           |
| Quantity                     | --               | --          | --            | --           |
| Schedule                     | --               | --          | --            | --           |
| Engineering                  | --               | --          | --            | --           |
| Estimating                   | --               | --          | --            | --           |
| Other                        | --               | --          | --            | --           |
| Support                      | --               | --          | --            | --           |
| Subtotal                     | --               | --          | --            | --           |
| Current Changes              |                  |             |               |              |
| Economic                     | +172.3           | +6729.8     | +114.3        | +7016.4      |
| Quantity                     | --               | --          | --            | --           |
| Schedule                     | --               | +1486.6     | --            | +1486.6      |
| Engineering                  | --               | --          | --            | --           |
| Estimating                   | -1221.7          | -10131.1    | -311.4        | -11664.2     |
| Other                        | --               | --          | --            | --           |
| Support                      | --               | -1781.2     | --            | -1781.2      |
| Subtotal                     | -1049.4          | -3695.9     | -197.1        | -4942.4      |
| Adjustments                  | --               | --          | --            | --           |
| Total Changes                | -1049.4          | -3695.9     | -197.1        | -4942.4      |
| CE - Cost Variance           | 43360.7          | 278951.9    | 4600.2        | 326912.8     |
| CE - Cost & Funding          | 43360.7          | 278951.9    | 4600.2        | 326912.8     |

| <b>Summary Base Year 2012 \$M</b> |                  |             |               |              |
|-----------------------------------|------------------|-------------|---------------|--------------|
|                                   | <b>RDT&amp;E</b> | <b>Proc</b> | <b>MILCON</b> | <b>Total</b> |
| SAR Baseline (Dev Est)            | 47982.1          | 224332.9    | 4168.0        | 276483.0     |
| Previous Changes                  |                  |             |               |              |
| Economic                          | --               | --          | --            | --           |
| Quantity                          | --               | --          | --            | --           |
| Schedule                          | --               | --          | --            | --           |
| Engineering                       | --               | --          | --            | --           |
| Estimating                        | --               | --          | --            | --           |
| Other                             | --               | --          | --            | --           |
| Support                           | --               | --          | --            | --           |
| Subtotal                          | --               | --          | --            | --           |
| Current Changes                   |                  |             |               |              |
| Economic                          | --               | --          | --            | --           |
| Quantity                          | --               | --          | --            | --           |
| Schedule                          | --               | --          | --            | --           |
| Engineering                       | --               | --          | --            | --           |
| Estimating                        | -1524.6          | -7016.7     | -270.2        | -8811.5      |
| Other                             | --               | --          | --            | --           |
| Support                           | --               | -1737.2     | --            | -1737.2      |
| Subtotal                          | -1524.6          | -8753.9     | -270.2        | -10548.7     |
| Adjustments                       | --               | --          | --            | --           |
| Total Changes                     | -1524.6          | -8753.9     | -270.2        | -10548.7     |
| CE - Cost Variance                | 46457.5          | 215579.0    | 3897.8        | 265934.3     |
| CE - Cost & Funding               | 46457.5          | 215579.0    | 3897.8        | 265934.3     |

Previous Estimate: December 2011

| <b>RDT&amp;E</b>   | <b>\$M</b>       |                  |
|--|------------------|------------------|
| <b>Current Change Explanations</b>   | <b>Base Year</b> | <b>Then Year</b> |
| Revised escalation indices. (Economic)   | N/A              | +172.3           |
| Adjustment for current and prior escalation. (Estimating)  | -101.9           | -99.6            |
| Decrease due to realignment of program funding, Congressional Marks, and Actual Funding Investment (Air Force). (Estimating) | -90.6            | -91.5            |
| Decrease due to realignment of program funding, Congressional Marks, and Actual Funding Investment (Navy). (Estimating)      | -47.5            | -49.6            |
| Realignment of cost between Aircraft subprogram and Engine subprogram (Air Force). (Estimating)                              | -960.8           | -820.1           |
| Realignment of cost between Aircraft subprogram and Engine subprogram (Navy). (Estimating)                                   | -1113.3          | -891.2           |
| Realignment of cost between Aircraft subprogram and Engine subprogram (International). (Estimating)                          | +789.5           | +730.3           |
| <b>RDT&amp;E Subtotal</b>  | <b>-1524.6</b>   | <b>-1049.4</b>   |

| <b>Procurement</b>  | <b>\$M</b>       |                  |
|---|------------------|------------------|
| <b>Current Change Explanations</b>  | <b>Base Year</b> | <b>Then Year</b> |
| Revised escalation indices. (Economic)  | N/A              | +6729.8          |
| Increase for revised DoD procurement profile (i.e. lower near-term ramp rate) from FY 2015 and FY 2016 to FY 2037 (Air Force). (Schedule)                               | 0.0              | +223.4           |
| Increase for revised DoD procurement profile (i.e. lower near-term ramp rate and procurement completion extended three years from FY 2029 to FY 2032 (Navy). (Schedule) | 0.0              | +1263.2          |
| Adjustment for current and prior escalation. (Estimating)   | -168.4           | -174.3           |
| Revised estimate to subcontractor due to the incorporation of the latest actual costs from early Low Rate Initial Production (LRIP) lots (Air Force). (Estimating)      | -1210.6          | -1859.6          |
| Revised estimate to subcontractor due to the incorporation of the latest actual costs from early LRIP lots (Navy). (Estimating)   | -924.6           | -1185.8          |
| Revised estimate to Airframe due to the incorporation of the latest actual costs from early LRIP lots (Air Force). (Estimating)   | +783.7           | +1280.5          |
| Revised estimate to Airframe due to the incorporation of the latest actual costs from early LRIP lots (Navy). (Estimating)  | +498.8           | +643.6           |
| Decrease due to incorporation of latest prime and subcontractor Labor Rates (Air Force). (Estimating)   | -4209.8          | -6481.4          |
| Decrease due to incorporation of latest prime and subcontractor Labor Rates (Navy). (Estimating)  | -1114.7          | -1371.9          |
| Increase due to slower International procurement quantity profile (Air Force). (Estimating)   | +364.4           | +583.8           |
| Increase due to slower International procurement quantity profile (Navy). (Estimating)  | +485.9           | +595.0           |
| Revised estimate to reflect the application of new outyear escalation indices (Air Force). (Estimating)   | -1030.1          | -1496.0          |
| Revised estimate to reflect the application of new outyear escalation indices (Navy). (Estimating)  | -491.3           | -665.0           |
| Adjustment for current and prior escalation. (Support)  | -48.2            | -50.0            |

|  |         |         |
|--|---------|---------|
| Decrease in Other Support due to maturation of technical baseline, definition of customer requirements. and further definition of Service beddown plans (Air Force). (Support) | -683.7  | -284.0  |
| Decrease in Other Support due to maturation of technical baseline, definition of customer requirements. and further definition of Service beddown plans (Navy). (Support)      | -875.4  | -748.9  |
| Decrease in Initial Spares due to revised estimate of required risk funding (Air Force). (Support)   | +125.6  | -290.2  |
| Decrease in Initial Spares due to revised estimate of required risk funding (Navy). (Support)  | -255.5  | -408.1  |
| Procurement Subtotal   | -8753.9 | -3695.9 |

| MILCON   | \$M       |           |
|--|-----------|-----------|
|  | Base Year | Then Year |
| <b>Current Change Explanations</b>   |           |           |
| Revised escalation indices. (Economic)   | N/A       | +114.3    |
| Adjustment for current and prior escalation. (Estimating)                        | -14.5     | -15.1     |
| Decrease due to revised estimate of MILCON requirements (Air Force) (Estimating) | -225.2    | -259.6    |
| Decrease due to revised estimate of MILCON requirements (Navy) (Estimating)      | -30.5     | -36.7     |
| MILCON Subtotal  | -270.2    | -197.1    |

**Cost Variance****F-35 Engine**

| <b>Summary Then Year \$M</b> |                  |             |               |              |
|------------------------------|------------------|-------------|---------------|--------------|
|                              | <b>RDT&amp;E</b> | <b>Proc</b> | <b>MILCON</b> | <b>Total</b> |
| SAR Baseline (Dev Est)       | 10823.7          | 53032.9     | --            | 63856.6      |
| Previous Changes             |                  |             |               |              |
| Economic                     | --               | --          | --            | --           |
| Quantity                     | --               | --          | --            | --           |
| Schedule                     | --               | --          | --            | --           |
| Engineering                  | --               | --          | --            | --           |
| Estimating                   | --               | --          | --            | --           |
| Other                        | --               | --          | --            | --           |
| Support                      | --               | --          | --            | --           |
| Subtotal                     | --               | --          | --            | --           |
| Current Changes              |                  |             |               |              |
| Economic                     | +42.4            | +1258.9     | --            | +1301.3      |
| Quantity                     | --               | --          | --            | --           |
| Schedule                     | --               | +271.3      | --            | +271.3       |
| Engineering                  | --               | --          | --            | --           |
| Estimating                   | +956.1           | -1593.4     | --            | -637.3       |
| Other                        | --               | --          | --            | --           |
| Support                      | --               | -493.2      | --            | -493.2       |
| Subtotal                     | +998.5           | -556.4      | --            | +442.1       |
| Total Changes                | +998.5           | -556.4      | --            | +442.1       |
| CE - Cost Variance           | 11822.2          | 52476.5     | --            | 64298.7      |
| CE - Cost & Funding          | 11822.2          | 52476.5     | --            | 64298.7      |

| <b>Summary Base Year 2012 \$M</b> |                  |             |               |              |
|-----------------------------------|------------------|-------------|---------------|--------------|
|                                   | <b>RDT&amp;E</b> | <b>Proc</b> | <b>MILCON</b> | <b>Total</b> |
| SAR Baseline (Dev Est)            | 11695.2          | 42332.9     | --            | 54028.1      |
| Previous Changes                  |                  |             |               |              |
| Economic                          | --               | --          | --            | --           |
| Quantity                          | --               | --          | --            | --           |
| Schedule                          | --               | --          | --            | --           |
| Engineering                       | --               | --          | --            | --           |
| Estimating                        | --               | --          | --            | --           |
| Other                             | --               | --          | --            | --           |
| Support                           | --               | --          | --            | --           |
| Subtotal                          | --               | --          | --            | --           |
| Current Changes                   |                  |             |               |              |
| Economic                          | --               | --          | --            | --           |
| Quantity                          | --               | --          | --            | --           |
| Schedule                          | --               | --          | --            | --           |
| Engineering                       | --               | --          | --            | --           |
| Estimating                        | +1245.4          | -1446.4     | --            | -201.0       |
| Other                             | --               | --          | --            | --           |
| Support                           | --               | -335.4      | --            | -335.4       |
| Subtotal                          | +1245.4          | -1781.8     | --            | -536.4       |
| Total Changes                     | +1245.4          | -1781.8     | --            | -536.4       |
| CE - Cost Variance                | 12940.6          | 40551.1     | --            | 53491.7      |
| CE - Cost & Funding               | 12940.6          | 40551.1     | --            | 53491.7      |

Previous Estimate: December 2011



| <b>RDT&amp;E</b>   | <b>\$M</b>       |                  |
|--|------------------|------------------|
|  | <b>Base Year</b> | <b>Then Year</b> |
| <b>Current Change Explanations</b>   |                  |                  |
| Revised escalation indices. (Economic)   | N/A              | +42.4            |
| Adjustment for current and prior escalation. (Estimating)  | -24.7            | -24.6            |
| Realignment of cost between Air Vehicle and Engine (Air Force). (Estimating)   | +959.2           | +820.1           |
| Realignment of cost between Air Vehicle and Engine (Navy). (Estimating)  | +1101.6          | +891.2           |
| Realignment of cost between Air Vehicle and Engine (International). (Estimating)   | -789.5           | -730.3           |
| Decrease due to International realignment of program funding (International). (Estimating)   | -0.2             | -0.2             |
| Refined Estimate to Concept Development Phase (CDP). (Estimating)  | -1.0             | -0.1             |
| <b>RDT&amp;E Subtotal</b>  | <b>+1245.4</b>   | <b>+998.5</b>    |
| <b>Procurement</b>   | <b>\$M</b>       |                  |
|  | <b>Base Year</b> | <b>Then Year</b> |
| <b>Current Change Explanations</b>   |                  |                  |
| Revised escalation indices. (Economic)   | N/A              | +1258.9          |
| Increase for revised DoD procurement profile (i.e. lower near-term ramp rate) from FY 2015 and FY 2016 to FY 2037 (Air Force). (Schedule)                                      | 0.0              | +40.6            |
| Increase for revised DoD procurement profile (i.e. lower near-term ramp rate and procurement completion extended three years from FY 2029 to FY 2032 (Navy). (Schedule)        | 0.0              | +230.7           |
| Adjustment for current and prior escalation. (Estimating)  | -30.3            | -31.5            |
| Increase due to slower International procurement quantity profile (Air Force). (Estimating)  | +38.3            | +45.0            |
| Increase due to slower International procurement quantity profile (Navy). (Estimating)   | +53.9            | +65.0            |
| Increase due to incorporation of latest actual costs from Low Rate Initial Production (LRIP) lots (Air Force). (Estimating)  | +21.6            | +42.1            |
| Decrease due to incorporation of latest actual costs from LRIP lots (Navy). (Estimating)   | -797.1           | -848.8           |
| Revised estimate to reflect the application of new outyear escalation indices (Air Force). (Estimating)  | -558.7           | -628.7           |
| Revised estimate to reflect the application of new outyear escalation indices (Navy). (Estimating)   | -174.1           | -236.5           |
| Adjustment for current and prior escalation. (Support)   | -8.2             | -8.4             |
| Decrease in Other Support due to maturation of technical baseline, definition of customer requirements. and further definition of Service beddown plans (Air Force). (Support) | -106.8           | -58.9            |
| Decrease in Other Support due to maturation of technical baseline, definition of customer requirements. and further definition of Service beddown plans (Navy). (Support)      | -83.8            | -63.0            |
| Decrease in Initial Spares due to revised estimate of required risk funding (Air Force). (Support)   | -56.4            | -236.6           |
| Decrease in Initial Spares due to revised estimate of required risk funding (Navy). (Support)  | -80.2            | -126.3           |
| <b>Procurement Subtotal</b>  | <b>-1781.8</b>   | <b>-556.4</b>    |

## Contracts

### General Contract Memo

While more current Earned Value Management System (EVMS) data is available, the F-35 SAR reports EVMS data on an annual basis (month ending December) to show year over year trends in the most consistent method possible.

### Appropriation: RDT&E

|                       |                           |
|-----------------------|---------------------------|
| Contract Name         | <b>JSF Air System SDD</b> |
| Contractor            | Lockheed Martin           |
| Contractor Location   | Fort Worth, TX 76101      |
| Contract Number, Type | N00019-02-C-3002, CPAF    |
| Award Date            | October 26, 2001          |
| Definitization Date   | October 26, 2001          |

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 18981.9                      | N/A     | 14  | 20203.0                      | N/A     | 14  | 30978.7                             | 30978.7         |

| Variance                      | Cost Variance | Schedule Variance |
|-------------------------------|---------------|-------------------|
| Cumulative Variances To Date  | -392.6        | -221.0            |
| Previous Cumulative Variances | -219.7        | -113.4            |
| Net Change                    | -172.9        | -107.6            |

### Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to poor performance in Overhead (which follows direct account performance), additional effort in Mission Systems software development and test, and additional Vehicle Systems Power and Thermal design and qualification efforts. Other cost drivers included Support Systems overruns in Health Management and Support Equipment design and procurement. Material transfer in Production Operations was a favorable offset.

The unfavorable net change in the schedule variance is due to poor performance in Overhead (which follows direct account performance), delayed Mission Systems software builds, and delayed completion of Vehicle Systems power and actuator testing. Delayed Training Systems courseware delivery, and Major Subcontractors management allocations were also contributors to poor schedule performance.

### General Contract Variance Explanation

Cumulative cost and schedule variances degraded from December 2011 to December 2012.

### Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications executed since the start of the contract.

**Appropriation: RDT&E**

|                       |                                |
|-----------------------|--------------------------------|
| Contract Name         | <b>JSF Propulsion F135 SDD</b> |
| Contractor            | Pratt & Whitney                |
| Contractor Location   | East Hartford, CT 06118        |
| Contract Number, Type | N00019-02-C-3003, CPAF         |
| Award Date            | October 26, 2001               |
| Definitization Date   | October 26, 2001               |

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 4827.8                       | N/A     | 33  | 6915.4                       | N/A     | 33  | 7402.8                              | 8326.6          |

| Variance                      | Cost Variance | Schedule Variance |
|-------------------------------|---------------|-------------------|
| Cumulative Variances To Date  | -20.0         | -26.8             |
| Previous Cumulative Variances | -19.6         | -13.6             |
| Net Change                    | -0.4          | -13.2             |

**Cost And Schedule Variance Explanations**

The unfavorable net change in the cost variance is due to unfavorable performance resulting in more labor resources and materials for design optimization and testing in the Fan, 3 Bearing Swivel Module, Low Pressure Turbine and Support Technical Publications and Data and Support System Data which was offset by favorable performance in the Lift Fan, Propulsion System Development Test, Flight Test and General and Administrative Rates.

The unfavorable net change in the schedule variance is due to delays to baseline plan in the Nozzle, Turbine Exhaust Case, Controls, Propulsion System Development Test and Flight Test.

**Contract Comments**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications executed since the start of the contract.

**Appropriation: Procurement**

|                       |                              |
|-----------------------|------------------------------|
| Contract Name         | <b>JSF Air System LRIP 3</b> |
| Contractor            | Lockheed Martin              |
| Contractor Location   | Fort Worth, TX 76101         |
| Contract Number, Type | N00019-08-C-0028, CPIF       |
| Award Date            | May 14, 2008                 |
| Definitization Date   | June 02, 2009                |

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 2775.2                       | N/A     | 17  | 3668.2                       | N/A     | 17  | 3929.4                              | 3994.5          |

| Variance                      | Cost Variance | Schedule Variance |
|-------------------------------|---------------|-------------------|
| Cumulative Variances To Date  | -393.5        | -68.9             |
| Previous Cumulative Variances | -315.0        | -65.0             |
| Net Change                    | -78.5         | -3.9              |

**Cost And Schedule Variance Explanations**

The unfavorable net change in the cost variance is due to LRIP 5 Proposal Prep activities and the impacts of foreign exchange rates for supplier BAE as well as increased allocations related to Supplier Quality Management, Recurring Manufacturing Support and Recurring Engineering Support.

The unfavorable net change in the schedule variance is due to Mate through Delivery due to early part shortages and quality issues, which drove line of balance inefficiencies and rework.

**Contract Comments**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications executed since the start of the contract.

**Appropriation: Procurement**

Contract Name **JSF Air System LRIP 4**  
 Contractor Lockheed Martin  
 Contractor Location Ft. Worth, TX 76101  
 Contract Number, Type N00019-09-C-0010, FPIF  
 Award Date March 11, 2009  
 Definitization Date November 19, 2010

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 3783.1                       | 4026.4  | 31  | 5653.6                       | N/A     | 32  | 5653.6                              | 5788.0          |

| Variance                      | Cost Variance | Schedule Variance |
|-------------------------------|---------------|-------------------|
| Cumulative Variances To Date  | -372.2        | -199.3            |
| Previous Cumulative Variances | -131.4        | -130.6            |
| Net Change                    | -240.8        | -68.7             |

**Cost And Schedule Variance Explanations**

The unfavorable net change in the cost variance is due to Wing-related inefficiencies driving overruns within apportioned support labor including Material Management, Material Inventory Control, Recurring Engineering Support, and Recurring Manufacturing Support. In addition, unfavorable cost performance is driven by Mate through Delivery due to impacts associated with the previous LM Aero Machinists strike as well as issues related to the hinges and Weapons Bay Doors driving a high volume of rework and out of station activity in Final Assembly.

The unfavorable net change in the schedule variance is due to parts being issued to the aircraft according to the revised post-strike recovery plan rather than the baselined Shop Operating Plan (SOP) 5.

**Contract Comments**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications executed since the start of the contract.

Estimated completion date is To Be Determined, as we are currently estimating completion dates for open MVRs.

The F-35 Joint Program Office is currently conducting a comprehensive Estimate at Completion analysis to reflect current cost projections which will result in an increase to the Program Manger's Estimated Price at Completion.

**Appropriation: Procurement**

|                       |                                   |
|-----------------------|-----------------------------------|
| Contract Name         | <b>JSF Propulsion F135 LRIP 4</b> |
| Contractor            | Pratt & Whitney                   |
| Contractor Location   | East Hartford, CT 06118           |
| Contract Number, Type | N00019-09-C-0015, CPIF/FPIF       |
| Award Date            | August 02, 2008                   |
| Definitization Date   | July 15, 2009                     |

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 1030.8                       | N/A     | 31  | 1156.3                       | 1232.0  | 37  | 1068.0                              | 1161.0          |

| Variance                      | Cost Variance | Schedule Variance |
|-------------------------------|---------------|-------------------|
| Cumulative Variances To Date  | -40.0         | -56.4             |
| Previous Cumulative Variances | -26.5         | -118.1            |
| Net Change                    | -13.5         | +61.7             |

**Cost And Schedule Variance Explanations**

The unfavorable net change in the cost variance is due to hardware costing more than plan, quality non-conformances and re-work, increased assembly time in the Lift Fan and Fan components and unfavorable adjustments to General and Administrative rates.

The favorable net change in the schedule variance is due to schedule recovery across all hardware components but primary drivers include, the Lift Fan, Turbine Exhaust Case/Augmentor and Fan.

**Contract Comments**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications executed since the start of the contract.

The estimated completion date of January 31, 2014 represents the additional time required being requested by the contractor with their Over Target Schedule (OTS) declaration submitted on January 31, 2013. No critical milestones are established since the OTS has not been accepted by the program office.

**Appropriation: Procurement**

|                       |                              |
|-----------------------|------------------------------|
| Contract Name         | <b>JSF Air System LRIP 5</b> |
| Contractor            | Lockheed Martin              |
| Contractor Location   | Ft Worth, TX 76101           |
| Contract Number, Type | N00019-10-C-0002, FPIF       |
| Award Date            | July 06, 2010                |
| Definitization Date   | December 14, 2012            |

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 5131.9                       | N/A     | 32  | 3899.6                       | N/A     | 32  | 4524.9                              | 4524.9          |

| Variance                      | Cost Variance | Schedule Variance |
|-------------------------------|---------------|-------------------|
| Cumulative Variances To Date  | -62.1         | -339.1            |
| Previous Cumulative Variances | --            | --                |
| Net Change                    | -62.1         | -339.1            |

**Cost And Schedule Variance Explanations**

The unfavorable cumulative cost variance is due to (in part) Lockheed Martin's (LM) establishment of a budget baseline that reflects approximately 85 percent of the undefinitized Not-to-Exceed contract value. Cost performance to date is driven by Manufacturing tasks due to strike-related overhead rate increases and Field Site Support activities due to overrunning the travel budget for Joint Strike Fighter International Programs Technical Assist activities. In addition, LRIP Lot 4 assembly delays continue to drive upward cost pressure as LM works to recover schedule.

The unfavorable cumulative schedule variance is due to Vehicle Systems and Mission Systems parts not issuing to the aircraft as planned per the original undefinitized baseline dates. LM is working to a post-strike recovery schedule and plans to re-baseline the LRIP Lot 5 schedule in month-end February 2013 to align with recently definitized DD 250 dates and contract requirements.

**Contract Comments**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications executed since the start of the contract.

## Deliveries and Expenditures

### F-35 Aircraft

| Deliveries To Date                 | Plan To Date | Actual To Date | Total Quantity | Percent Delivered |
|------------------------------------|--------------|----------------|----------------|-------------------|
| Development                        | 14           | 14             | 14             | 100.00%           |
| Production                         | 44           | 36             | 2443           | 1.47%             |
| Total Program Quantities Delivered | 58           | 50             | 2457           | 2.04%             |

#### Expenditures and Appropriations (TY \$M)

|                        |          |                            |         |
|------------------------|----------|----------------------------|---------|
| Total Acquisition Cost | 326912.8 | Years Appropriated         | 20      |
| Expenditures To Date   | 48661.8  | Percent Years Appropriated | 45.45%  |
| Percent Expended       | 14.89%   | Appropriated to Date       | 68494.9 |
| Total Funding Years    | 44       | Percent Appropriated       | 20.95%  |

The above data is current as of 3/13/2013.

Note - Planned deliveries in 2012 were primarily delayed due to IAM&AW workers strike.

Note - Totals reflect United States aircraft only-no International Partner aircraft.

### F-35 Engine

| Deliveries To Date                 | Plan To Date | Actual To Date | Total Quantity | Percent Delivered |
|------------------------------------|--------------|----------------|----------------|-------------------|
| Development                        | 14           | 14             | 14             | 100.00%           |
| Production                         | 44           | 36             | 2443           | 1.47%             |
| Total Program Quantities Delivered | 58           | 50             | 2457           | 2.04%             |

#### Expenditures and Appropriations (TY \$M)

|                        |         |                            |         |
|------------------------|---------|----------------------------|---------|
| Total Acquisition Cost | 64298.7 | Years Appropriated         | 20      |
| Expenditures To Date   | 12773.2 | Percent Years Appropriated | 45.45%  |
| Percent Expended       | 19.87%  | Appropriated to Date       | 16509.4 |
| Total Funding Years    | 44      | Percent Appropriated       | 25.68%  |

The above data is current as of 3/13/2013.

As part of the development program restructure, the Secretary of Defense directed that one production aircraft (CF-5) be used as an additional flight test asset to ensure the program had the additional capacity necessary to handle Carrier Variant testing. Although the purchase was made via the Low-Rate Initial Production Lot 4 contract, the aircraft is considered a Research, Development, Test, and Evaluation-funded System Development and Demonstration asset.



## Operating and Support Cost

### F-35 Aircraft

#### Assumptions and Ground Rules

##### Cost Estimate Reference:

The Department's Cost Analysis and Program Evaluation (CAPE) office updated its Operating and Support (O&S) cost estimate for the Milestone B DAB review held in February 2012.

##### Sustainment Strategy:

The F-35 weapon system sustainment strategy is based on the following tenets:

- (1) the program office will serve as the Product Support Manager
- (2) the long term Product Support Integrator is yet to be determined
- (3) the program will inject competition in areas where feasible
- (4) program will continually improve reliability and maintainability of the weapon system to drive down O&S costs

##### Antecedent Information:

The F-35 family of aircraft variants will replace or augment five current aircraft: F-16C/D, F-15C/D, A-10, F/A-18C/D, and AV-8B. The F-35 O&S estimate is based on legacy fleet history only when F-35 specific data is not available.

| <b>Unitized O&amp;S Costs BY2012 \$K</b> |  |   |
|--|--|---|
| <b>Cost Element</b>                      | <b>F-35 Aircraft<br/>Cost per Flying Hour (\$)</b> | <b>F-16C/D (Antecedent)<br/>Cost per Flying Hour (\$)</b> |
| Unit-Level Manpower                      | 8.434  | 9.512   |
| Unit Operations                          | 7.830  | 5.608   |
| Maintenance                              | 8.729  | 5.469   |
| Sustaining Support                       | 3.508  | 2.039   |
| Continuing System Improvements           | 3.422  | 2.271   |
| Indirect Support                         | 0.000  | 0.000   |
| Other                                    | 0.000  | 0.000   |
| <b>Total</b>                             | <b>31.923</b>                                      | <b>24.899</b>   |

Unitized Cost Comments:

While we acknowledge the challenges of comparing the 5th Generation F-35 to legacy aircraft, the cost table above compares the adjusted F-16C/D Cost Per Flying Hour (CPFH) to an estimated F-35 CPFH for the F-35 Conventional Takeoff and Landing (CTOL) variant only. The CTOL variant will make up the majority of the DoD F-35 aircraft buy, 1,763 of the 2,443 total.

The F-16C/D costs were developed in a joint effort with the Air Force Cost Analysis Agency and have been normalized for comparison to the F-35 estimate. The starting point for the F-16C/D CPFH is an average of actual obligations across FY 2008 through FY 2010. In order to make the comparison more relevant, the actual F-16C/D CPFH was adjusted to reflect the cost of fuel and number of flight hours assumed by F-35A. The F-16C/D was also increased to include costs that F-16 shares with other Air Force platforms: Systems Engineering/Program Management (SEPM), maintenance training costs, certain software development efforts, and information systems. Costs for mission planning are included in the F-35A CPFH but equivalent costs for the F-16C/D are not available so no adjustment was made in this area. The final adjustment to the F-16C/D was to reflect the original requirement/unconstrained level instead of reported obligations. These adjustments are consistent with F-35A CPFH estimate which is based on full funding of all requirements.

Given the significant increase in capability, it is reasonable that the F-35 costs more to operate and sustain than certain legacy aircraft.

|                  | Total O&S Cost \$M                          |          |                  |                      |
|------------------|---|----------|------------------|----------------------|
|                  | Current Development APB Objective/Threshold |          | Current Estimate |                      |
|                  | F-35 Aircraft                               |          | F-35 Aircraft    | F-16C/D (Antecedent) |
| <b>Base Year</b> | 617000.0                                    | 678700.0 | 617014.4         | N/A                  |
| <b>Then Year</b> | 1113272.6                                   | N/A      | 1113273.0        | N/A                  |

Total O&S Costs Comments:

The Total O&S Costs above reflect the CAPE's independent cost estimate prepared in March 2012 to support the Milestone (MS) B recertification Defense Acquisition Board (DAB) review (reflected in SAR 11). The estimate will be updated for the annual DAB review of the F-35 program. The O&S estimate is for all three United States variants based on an estimated 30-year service-life and predicted attrition and usage rates, and is not a simple extrapolation of the F-35 costs shown in the unitized O&S costs table. The F-35 usage rates in terms of aircraft flight hours per year differ across variants as follows: CTOL @ 250; STOVL @302; and CV @ 316. The Total O&S costs are adjusted for cost growth above inflation. A comparable number for antecedent systems is not available.

While this SAR reflects the CAPE MS B recertification O&S cost estimate, the program continues to make progress toward reducing the programs's sustainment costs. The Services and the Department continue to support the F-35 Joint Program Office (JPO) in its disciplined approach to analyzing and reducing sustainment costs. The program office has pursued a sustainment Business Case Analysis to identify areas for reduction. The JPO conducted an Industry Day to foster competition in several areas of the sustainment program, including elements of the supply chain, support equipment, training operations support and Autonomic Logistics Information System administration. The program has instituted a robust Reliability and Maintainability program that is systematically identifying cost drivers and optimizing the maintenance approach for those components while continuing to institute tighter contract standards for suppliers to drive down repair turn times. Additionally, the program has instituted a Targeted Affordability Program that provides an increased emphasis on operations and sustainment and total ownership costs. The program continues to work with the prime contractors to achieve an efficient Performance Based Logistics environment at the overarching weapon system level. The ultimate goal of all of this work is to produce an affordable sustainment enterprise that operates, manages and supports the global system, while meeting warfighter-defined readiness.

**Disposal Costs**

Program maturity is not at a point where disposal costs can be estimated within an acceptable margin of error.

**F-35 Engine**

**Assumptions and Ground Rules**

Cost Estimate Reference:

Operating and Support (O&S) costs for the engine subprogram are included in the overall program costs that are shown in the F-35 Aircraft subprogram.

Sustainment Strategy:

Operating and Support (O&S) costs for the engine subprogram are included in the overall program costs that are shown in the F-35 Aircraft subprogram.

Antecedent Information:

Operating and Support (O&S) costs for the engine subprogram are included in the overall program costs that are shown in the F-35 Aircraft subprogram.

| Unitized O&S Costs BY2012 \$K  |             |                            |
|--------------------------------|-------------|----------------------------|
| Cost Element                   | F-35 Engine | No Antecedent (Antecedent) |
| Unit-Level Manpower            | 0           | 0                          |
| Unit Operations                | 0           | 0                          |
| Maintenance                    | 0           | 0                          |
| Sustaining Support             | 0           | 0                          |
| Continuing System Improvements | 0           | 0                          |
| Indirect Support               | 0           | 0                          |
| Other                          | 0           | 0                          |
| Total                          | --          | --                         |

Unitized Cost Comments:

Operating and Support (O&S) costs for the engine subprogram are included in the overall program costs that are shown in the F-35 Aircraft subprogram.

|                  | Total O&S Cost \$M                          |                  |                            |     |
|------------------|---|------------------|----------------------------|-----|
|                  | Current Development APB Objective/Threshold | Current Estimate |                            |     |
|                  | F-35 Engine                                 | F-35 Engine      | No Antecedent (Antecedent) |     |
| <b>Base Year</b> | 0.0   | 0.0              | N/A                        | N/A |
| <b>Then Year</b> | 0.0   | N/A              | N/A                        | N/A |

Total O&S Costs Comments:

Operating and Support (O&S) costs for the engine subprogram are included in the overall program costs that are shown in the F-35 Aircraft subprogram.

**Disposal Costs**

Operating and Support (O&S) costs for the engine subprogram are included in the overall program costs that are shown in the F-35 Aircraft subprogram.