



## Selected Acquisition Report (SAR)

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



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

As of FY 2015 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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UNCLASSIFIED

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## Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
BA - Budget Authority/Budget Activity  
BY - Base Year  
DAMIR - Defense Acquisition Management Information Retrieval  
Dev Est - Development Estimate  
DoD - Department of Defense  
DSN - Defense Switched Network  
Econ - Economic  
Eng - Engineering  
Est - Estimating  
FMS - Foreign Military Sales  
FY - Fiscal Year  
IOC - Initial Operational Capability  
\$K - Thousands of Dollars  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MILCON - Military Construction  
N/A - Not Applicable  
O&S - Operating and Support  
Oth - Other  
PAUC - Program Acquisition Unit Cost  
PB - President's Budget  
PE - Program Element  
Proc - Procurement  
Prod Est - Production Estimate  
QR - Quantity Related  
Qty - Quantity  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
Sch - Schedule  
Spt - Support  
TBD - To Be Determined  
TY - Then Year  
UCR - Unit Cost Reporting

## Program Information

### Program Name

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

### DoD Component

DoD

### Joint Participants

United States Navy; United States Air Force; United States Marine Corps; United Kingdom; Italy; The Netherlands; Turkey; Canada; Australia; Denmark; Norway

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

## 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 Aircraft (F-35) 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; F-35B; and the F-35C. The F-35A 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 F-35B 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 F-35C 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 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 FMS customers. The F-35 program has completed over twelve years of SDD, is currently executing LRIP and is standing up operational sites across the country.

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 2013. Successes include: signing the restructured SDD contract modification; completing the Block 3 Critical Design Review; announcing the decision to terminate development of an alternate Helmet Mounted Display System (HMDS); completing the 2nd F-35B Ship-Trial period (DT-II) operations on U.S. Ship WASP, accomplishing 95 Vertical Landings and 94 Short Takeoffs, with 19 night takeoffs; rolling-out the 100th aircraft from the production facility at Fort Worth, Texas; and resolving lingering technical design shortfalls to include the F-35C Arresting Hook, Lightning Protection and Fuel Dump.

In addition to our successes, challenges remain. Software development and integration continue to be the highest risks the program faces as it completes development. Other areas that are of high interest and have warranted specific management attention include the Autonomic Logistic Information System (ALIS), Prognostics and Health Management System (PHM), overall Reliability and Maintainability (R&M), cracks found during F-35B durability testing and F135 engine blade issues. These are typical challenges faced during a development program and progress has been made against each of these in 2013.

As mentioned above, software development and integration remain the highest technical risks to completion of the development program. Over the past two years, the Program Office has implemented significant changes in how system software is developed, lab tested, flight tested, measured and controlled. These changes are showing positive effects, and the program is moderately confident that the program will successfully release the Block 2B and 3I capability as planned in 2015 and 2016. Block 2B is the initial combat capability, which the U.S. Marine Corps (USMC) plans to use to declare IOC. The Air Force plans to declare IOC with the Block 3I capabilities by August 2016. However, there is more risk to the delivery of Block 3F, required for Navy IOC and the Services' full warfighting capability, by August 2018.

Maturation of the critical logistics systems products and sustainment operation processes continues to improve, although slower than the Program Office would like, as the program continues to develop and field the F-35 weapon system. Development of ALIS to meet Services IOC requirements continues to mature as the program stands up operational sites. ALIS is no longer treated as a piece of support equipment, but rather like a weapon system. Increasing emphasis on: regular design reviews, systems engineering discipline, software development planning with baseline review boards, and focused metrics and upgraded/improved lab infrastructure.

One critical challenge the program made head way on in 2013 was the HMDS. For more than two years, the program worked with industry teammates to conduct dedicated flight tests and develop solutions to address the helmet's technical challenges. Those issues that hampered helmet function have been resolved, and the unit cost of the helmet system has decreased. As a result of testing and mitigation of the HMDS issues, the parallel development of an alternate helmet has been terminated. The current helmet has been deemed acceptable to support USMC IOC in 2015, and the Generation 3 helmet - to be introduced to the fleet in LRIP Lot 7 in 2016 - will meet program requirements to complete test and development in 2017. The Generation 3 helmet will include an improved night vision camera, new Liquid-Crystal Displays, automated alignment, and software improvements. The downselect to the current HMDS also resulted in a price guarantee that reduced the overall cost of the HMDS by 13 percent for the next five years.

R&M remains an area for improvement. Fleet performances (full mission capability rates) have not met expectations, or projected growth curves. To address these issues, the program is implementing a multi-phase improvement process. The program is standing up a fully funded rigorous R&M program that will establish R&M performance goals and hold the enterprise responsible for meeting these goals. In addition, the program is working on accelerating aircraft retrofits and modifications to measure R&M improvements. The program has also stood up a cost war room with participation from Lockheed Martin (LM), Pratt & Whitney (P&W), and their suppliers; and started a second Business Case Analysis to guide future sustainment decisions.

As of late December 2013, the F-35 Program has flown more than 3,700 flights totaling more than 6,400 flight hours on the development flight test program. The program completed 1,168 of 1,153 test flights planned for the year, conducted 19 Safe Weapon Separations (GBU-31/-12/-32 & AIM-120), 4 Integrated Weapons Delivery Accuracy Tests (GBU-12/-32/2 x AIM-120), completed the first 4-Ship Multi-function Advanced Data Link airborne connectivity test with all variants (F-35A/B/C) and completed night/instrument meteorological conditions Flight Testing. All three variants have completed their first lifetime (8,000 hours) of structural fatigue testing and have begun their second life tests. On December 4, 2013 the 33rd Fighter Wing reached a new single-day sortie record by flying 45 operational training missions: the F-35B completed 32 flights, the F-35A had 10 flights, and the F-35C flew three missions.

LM factory assembly operations are generally tracking to plan. Flight line operations are continuing to demonstrate improvement, but continued improvement is needed. The Government accepted (DD-250) the last of 32 LRIP Lot 4 aircraft on November 22, 2013. This was four months late to the post-strike plan and eight months late to the original pre-2010 contract date. On average, LRIP Lot 4 were delivered approximately five months late to the Government contract dates. All LRIP Lot 5 aircraft are either in Final Assembly or in Flight Line operations. As of December 24, 2013, ten LRIP Lot 5 aircraft have been delivered. LRIP Lot 5 DD-250 dates have averaged two and a half months late to contract dates. The delivery goal for 2013 was reduced to 36 aircraft due to the Fort Worth, Texas Joint Reserve Base runway maintenance shutdown in August 2013. By the end of 2013 the program had delivered 35 of the 36 planned aircraft to the Government in 2013.

On September 27, 2013, the government signed the LRIP Lot 6 and LRIP Lot 7 production contracts with LM. These contracts, valued at \$8.3 billion (B) combined, will secure the production of 71 aircraft (to include IP aircraft) to be delivered in 2014 through 2016. LRIP Lot 6 will mark the first delivery of F-35 IP aircraft for Italy and Australia, and LRIP Lot 7 will mark the first delivery for Norway. In addition, LM will now be responsible to cover 100 percent of any cost overruns and will share costs equally with the government (50/50 ratio) for known concurrency changes arising from SDD testing and qualification. This agreement marks a reduction in aircraft cost from LRIP Lot 5 to Lot 6 and a 5 percent reduction from LRIP Lot 6 to Lot 7.

F135 engine deliveries continue to meet aircraft need dates. On October 23, 2013, a contract with P&W for the sixth lot of F135 propulsion systems was signed. The LRIP Lot 6 contract is valued at \$1.1B and covers 38 total engines. This agreement marks a 2.5 percent reduction in F-35A/F-35C engine costs and 9.6 percent reduction in F-35B engine costs.

In 2013, the program stood up new F-35 squadrons at Edwards Air Force Base (AFB), Nellis AFB, and Eglin AFB, made Marine Corps Air Station Beaufort ready for F-35 operations, started up aircraft modification lines at Fleet Readiness Center East and at the Ogden Air Logistics Center, opened the first overseas F-35 Final Assembly and Checkout facility in Italy, qualified 65 pilots, including two for the United Kingdom (UK) and trained 414 maintainers (including UK and Netherlands).

Affordability remains a top priority for the program. The program is attacking this issue head-on by focusing on cost savings, cost reductions and cost avoidance in development, production, and O&S.



The program has also implemented a strategy that will include event-based criteria and financial incentives for LM to achieve certain program priorities in the areas of software, ALIS, and R&M.

On the international front, the program made significant progress with both our IPs and FMS countries. There were many "firsts" during the past year to include the delivery and acceptance of two Netherlands F-35As, first Australian and Italian aircraft under contract (LRIP Lot 6), first Norwegian aircraft under contract (LRIP Lot 7) and the first Netherlands pilot in training. In addition, a major FMS accomplishment was the establishment of the initial Guiding Principles for FMS integration into the overall program to include financial rules of engagement, and participations in key functional areas such as sustainment.

In March 2012, in conjunction with the Milestone B decision, certification was made pursuant to section 2366b of title 10, United States Code (U.S.C.). However, at that time, the Milestone Decision Authority waived provision (3)(c), which certifies that the Joint Requirements Oversight Council (JROC) has accomplished 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 "TBD" by the Services, a waiver has been in place. In June 2013, the Services sent a joint report to the U.S. Congress detailing their IOC requirements and dates; however, until the Under Secretary of Defense for Acquisition, Technology and Logistics certifies that this provision has been satisfied, the waiver remains in place. The Department will continue to review the F-35 program at least annually until the certification requirement for this provision is satisfied.

## Threshold Breaches

### F-35 Aircraft

APB Breaches		
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<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		
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<b>Current UCR Baseline</b>		
	PAUC	None
	APUC	None
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

### F-35 Engine

APB Breaches		
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<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		
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<b>Current UCR Baseline</b>		
	PAUC	None
	APUC	None
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

### Explanation of Breach

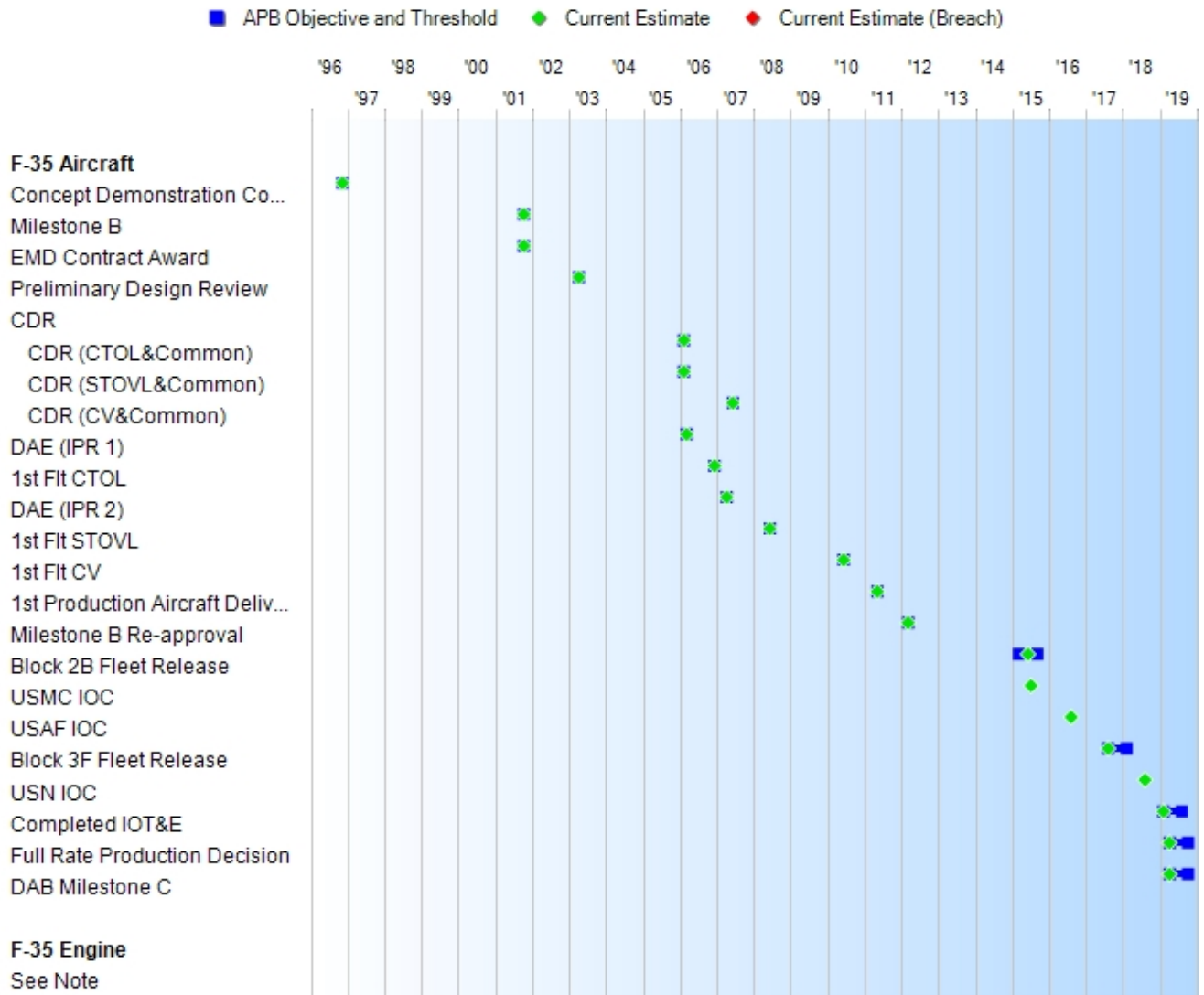
The RDT&E cost breach was first reported in the 2012 SAR. It is the result of correcting an error made in the allocation of program funding to the two subprograms. The breach is not in any way due to cost growth in the F-35 Engine development program.

During the March 26, 2012 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.

The Program has corrected the allocation issue in the SAR data base, 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 has been 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	NOV 1996	NOV 1996
Milestone B	OCT 2001	OCT 2001	OCT 2001	OCT 2001
EMD Contract Award	OCT 2001	OCT 2001	OCT 2001	OCT 2001
Preliminary Design Review	APR 2003	APR 2003	APR 2003	APR 2003
CDR				
CDR (CTOL&Common)	FEB 2006	FEB 2006	FEB 2006	FEB 2006
CDR (STOVL&Common)	FEB 2006	FEB 2006	FEB 2006	FEB 2006
CDR (CV&Common)	JUN 2007	JUN 2007	JUN 2007	JUN 2007
DAE (IPR 1)	MAR 2006	MAR 2006	MAR 2006	MAR 2006
1st Flt CTOL	DEC 2006	DEC 2006	DEC 2006	DEC 2006
DAE (IPR 2)	APR 2007	APR 2007	APR 2007	APR 2007
1st Flt STOVL	JUN 2008	JUN 2008	JUN 2008	JUN 2008
1st Flt CV	JUN 2010	JUN 2010	JUN 2010	JUN 2010
1st Production Aircraft Delivered	MAY 2011	MAY 2011	MAY 2011	MAY 2011
Milestone B Re-approval	MAR 2012	MAR 2012	MAR 2012	MAR 2012
Block 2B Fleet Release	MAR 2015	MAR 2015	SEP 2015	JUN 2015
USMC IOC	TBD	TBD	TBD	JUL 2015 (Ch-1)
USAF IOC	TBD	TBD	TBD	AUG 2016 (Ch-1)
Block 3F Fleet Release	AUG 2017	AUG 2017	FEB 2018	AUG 2017
USN IOC	TBD	TBD	TBD	AUG 2018 (Ch-1)
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

### Change Explanations

(Ch-1) Service IOC dates have been established, per Congressional Report titled "F-35 Initial Operational Capability" June 2013.

### Memo

1/ Original MS B rescinded in June 2010 due to Nunn-McCurdy breach. MS B Re-approval completed March 2012.

2/ IOT&E completion is 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/ FRP Decision will replace the DAB MS C. Also, the June 2010 Nunn-McCurdy Acquisition Decision Memorandum directs that FRP will be MS C for this program.

4/ Jun 2015 2B Fleet Release forecast reflects full incorporation Technical Baseline Review test ground rules and arresting hook redesign as well as the Block Review Board approval of the Block 2B Build Plan

### 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  
 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

### F-35 Engine

Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate
See Note	N/A	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 581 ft. STO with 2 JDAM (internal), 2 AIM-120 (internal), fuel to fly 456nm	(Ch-1)
Combat Radius NM - CTOL Variant	690	690	590	TBD	613	(Ch-1)

Combat Radius NM - STOVL Variant	550	550	450	TBD	456	(Ch-1)
Combat Radius NM -CV Variant	730	730	600	TBD	610	
Mission Reliability - CTOL Variant	98%	98%	93%	TBD	97%	(Ch-1)
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 29,410 cu ft., 243 ST	(Ch-1)
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 5 C-17 equivalents	(Ch-1)
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 17,500 cu ft, 102 ST	(Ch-1)
Sortie Generation Rates - CTOL Variant	4.0/3.0/2.0 2.5 ASD	4.0/3.0/2.0 2.5 ASD	3.0/2.0/1.0 2.5 ASD	TBD	4.0/3.0/2.0 2.5 ASD	
Sortie Generation Rates - CV Variant	4.0/3.0/1.0 1.8 ASD	4.0/3.0/1.0 1.8 ASD	3.0/2.0/1.0 1.8 ASD	TBD	4.0/3.0/1.0 1.8 ASD	
Sortie Generation Rates - STOVL Variant (USMC)	6.0/4.0/2.0 1.1 ASD	6.0/4.0/2.0 1.1 ASD	4.0/3.0/1.0 1.1 ASD	TBD	6.0/4.0/2.0 1.1 ASD	
CV Recovery Performance (Vpa)	Vpa. Maximum approach speed (Vpa) at required carrier landing weight (RCLW) of less than 140 knots.	Vpa at required carrier landing weight (RCLW) of less than 140 knots.	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 144 knots.	(Ch-1)

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

**Requirements Source**

Operational Requirements Document (ORD) Change 3 dated August 19, 2008 as modified by Joint Requirements Oversight Council Memorandum 040-12 dated March 16, 2012

**Change Explanations**

(Ch-1) Current estimate is based on Aircraft Configuration 240-4.7, as reflected in the October 2013 KPP status update.

**Memo**

1/ The F-35 Program is currently in developmental testing, and will provide demonstrated performance with the Block 3F full capability aircraft.

**Acronyms and Abbreviations**

- ASD - Average Sortie Duration
- CTOL - Conventional Takeoff and Landing
- CU FT - Cubic Feet
- CV - Aircraft Carrier Suitable Variant
- IER - Information Exchange Requirement
- JDAM - Joint Direct Attack Munitions
- KTS - Knots
- NM - Nautical Miles
- RCLW - Required Carrier Landing Weight
- ST - Short Tons
- STO - Short Takeoff
- STOVL - Short Takeoff and Vertical Landing
- Vpa - Max Approach Speed
- WOD - Wind Over the Deck

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 August 19, 2008 as modified by Joint Requirements Oversight Council Memorandum 040-12 dated March 16, 2012

**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

<b>General Memo</b>
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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, RDT&E Non-Treasury Funds. RDT&E cost excludes Follow-on Development Funding.

<b>RDT&amp;E</b>
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	Appn	BA	PE		
Navy	1319	04	0603800N		
	<b>Project</b>		<b>Name</b>		
	2209		RDT&E, Navy CDP		(Sunk)
Navy	1319	05	0604800M		
	<b>Project</b>		<b>Name</b>		
	2262		RDT&E, Marine Corps		
Navy	1319	05	0604800N		
	<b>Project</b>		<b>Name</b>		
	2261		RDT&E, Navy EMD/JSF		
	3194		RDT&E, Navy EMD/Joint Reprogramming Center		(Sunk)
	9999		RDT&E, Navy EMD/Congressional Adds		(Sunk)
Air Force	3600	04	0603800F		
	<b>Project</b>		<b>Name</b>		
	2025		RDT&E, Air Force CDP		(Sunk)
Air Force	3600	05	0604800F		
	<b>Project</b>		<b>Name</b>		
	3831		RDT&E, Air Force EMD/Joint Strike Fighter Quantity of RDT&E Articles		
			The funding in this line was inadvertently loaded into BA04. AF intends to execute funding in BA05. Correct load is: FY15=\$4,976K & FY16=\$4,979K .		
	<b>Notes:</b>				
Defense- Wide	0400	03	0603800E		
	<b>Project</b>		<b>Name</b>		

RDT&E, DARPA

(Sunk)

**Procurement**

Appn	BA	PE	
Navy	1506	01	0204146N
	<b>Line Item</b>	<b>Name</b>	
	0147	JSF (Navy)	
Navy	1506	01	0204146M
	<b>Line Item</b>	<b>Name</b>	
	0152	JSF (Marine Corps)	
Navy	1506	05	0204146M
	<b>Line Item</b>	<b>Name</b>	
	0592	F-35 STOVL Mods	
Navy	1506	05	0204146N
	<b>Line Item</b>	<b>Name</b>	
	0593	F-35 CV Mods	
Navy	1506	06	0204146N
	<b>Line Item</b>	<b>Name</b>	
	0605	Initial Spares (Navy)	(Shared)
Navy	1506	06	0204146M
	<b>Line Item</b>	<b>Name</b>	
	0605	Initial Spares (Marine Corps)	(Shared)
Air Force	3010	06	0207142F
	<b>Line Item</b>	<b>Name</b>	
	000999	Initial Spares (Air Force)	(Shared)
Air Force	3010	01	0207142F
	<b>Line Item</b>	<b>Name</b>	
	ATA000	JSF (Air Force)	
Air Force	3010	05	0207142F
	<b>Line Item</b>	<b>Name</b>	
	F03500	Mods (Air Force)	

**MILCON**

Appn	BA	PE	
Navy	1205	01	0212576N
	<b>Project</b>	<b>Name</b>	
		MILCON, USN	(Shared) (Sunk)
Navy	1205	01	0216496M
	<b>Project</b>	<b>Name</b>	
		MILCON, USN	(Shared)
Navy	1205	01	0816376N

	<b>Project</b>		<b>Name</b>	
			MILCON, USN	(Shared)
Air Force	3300	01	0207142F	
	<b>Project</b>		<b>Name</b>	
			MILCON, AF	(Shared)
Air Force	3300	01	0207597F	
	<b>Project</b>		<b>Name</b>	
			MILCON, AF	(Shared)
	<b>Notes:</b>		PE 0207597F is a new PE	

**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, RDT&E Non-Treasury Funds. RDT&E cost excludes Follow-on Development Funding.

**RDT&E**

	<b>Appn</b>	<b>BA</b>	<b>PE</b>	
Navy	1319	04	0603800N	
	<b>Project</b>		<b>Name</b>	
	2209		RDT&E, Navy CDP	(Sunk)
Navy	1319	05	0604800M	
	<b>Project</b>		<b>Name</b>	
	2262		RDT&E, Marine Corps	
Navy	1319	05	0604800N	
	<b>Project</b>		<b>Name</b>	
	2261		RDT&E, Navy EMD/JSF	
	3194		RDT&E, Navy EMD/Joint Reprogramming Center	(Sunk)
	9999		RDT&E, Navy EMD/Congressional Adds	(Sunk)
Air Force	3600	04	0603800F	
	<b>Project</b>		<b>Name</b>	
	2025		RDT&E, Air Force CDP	(Sunk)
Air Force	3600	05	0604800F	
	<b>Project</b>		<b>Name</b>	
	3831		RDT&E, Air Force EMD/Joint Strike Fighter Quantity of RDT&E Articles	
			The funding in this line was	

**Notes:** inadvertently loaded into BA04.  
 AF intends to execute funding in  
 BA05. Correct load is:  
 FY15=\$4,976K &  
 FY16=\$4,979K .

Defense- Wide	0400	03	0603800E
	<b>Project</b>		<b>Name</b>
			RDT&E, DARPA (Sunk)

**Procurement**

Appn	BA	PE	
Navy	1506	01	0204146N
	<b>Line Item</b>		<b>Name</b>
	0147		JSF (Navy)
Navy	1506	01	0204146M
	<b>Line Item</b>		<b>Name</b>
	0152		JSF (Marine Corps)
Navy	1506	06	0204146M
	<b>Line Item</b>		<b>Name</b>
	0605		Initial Spares (Marine Corps) (Shared)
Navy	1506	06	0204146N
	<b>Line Item</b>		<b>Name</b>
	0605		Initial Spares (Navy) (Shared)
Air Force	3010	06	0207142F
	<b>Line Item</b>		<b>Name</b>
	000999		Initial Spares (Air Force) (Shared)
Air Force	3010	01	0207142F
	<b>Line Item</b>		<b>Name</b>
	ATA000		JSF (Air Force)
Air Force	3010	05	0207142F
	<b>Line Item</b>		<b>Name</b>
	F03500		Mods (Air Force)

## 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	--	59172.9	55233.8	55233.8	54897.6
Procurement	266665.8	266665.8	--	260618.7	335680.7	335680.7	339266.0
Flyaway	--	--	--	226216.1	--	--	296396.3
Recurring	--	--	--	202475.0	--	--	266574.0
Non Recurring	--	--	--	23741.1	--	--	29822.3
Support	--	--	--	34402.6	--	--	42869.7
Other Support	--	--	--	18030.9	--	--	21775.2
Initial Spares	--	--	--	16371.7	--	--	21094.5
MILCON	4168.0	4168.0	--	3701.9	4797.3	4797.3	4421.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	330511.1	330511.1	N/A	323493.5	395711.8	395711.8	398584.6

## 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	Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	47982.1	47982.1	52780.9	45908.7	44410.1	44410.1	42772.6
Procurement	224332.9	224332.9	246767.1	217450.0	282647.8	282647.8	282770.5
Flyaway	--	--	--	189815.1	--	--	248504.2
Recurring	--	--	--	168479.4	--	--	221638.9
Non Recurring	--	--	--	21335.7	--	--	26865.3
Support	--	--	--	27634.9	--	--	34266.3
Other Support	--	--	--	16129.3	--	--	19485.8
Initial Spares	--	--	--	11505.6	--	--	14780.5
MILCON	4168.0	4168.0	4582.5	3701.9	4797.3	4797.3	4421.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	276483.0	276483.0	N/A	267060.6	331855.2	331855.2	329964.1

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.

<b>Quantity</b>	<b>SAR Baseline Dev Est</b>	<b>Current APB Development</b>	<b>Current Estimate</b>
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>13264.2</b> <sup>1</sup>	10823.7	10823.7	12125.0
Procurement	42332.9	42332.9	46566.2	43168.7	53032.9	53032.9	56495.5
Flyaway	--	--	--	36401.0	--	--	47892.1
Recurring	--	--	--	33995.6	--	--	44935.1
Non Recurring	--	--	--	2405.4	--	--	2957.0
Support	--	--	--	6767.7	--	--	8603.4
Other Support	--	--	--	1901.6	--	--	2289.4
Initial Spares	--	--	--	4866.1	--	--	6314.0
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	56432.9	63856.6	63856.6	68620.5

<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 FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	48972.0	1454.0	1514.1	1587.4	1131.3	221.5	17.3	0.0	54897.6
Procurement	33111.9	6057.0	6673.2	8883.5	10289.1	12039.7	12665.2	249546.4	339266.0
MILCON	1235.0	56.0	207.0	66.7	228.6	328.5	175.7	2123.5	4421.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2015 Total	83318.9	7567.0	8394.3	10537.6	11649.0	12589.7	12858.2	251669.9	398584.6
PB 2014 Total	85004.3	8577.1	10087.5	11578.2	12220.3	13394.9	12417.3	237931.9	391211.5
Delta	-1685.4	-1010.1	-1693.2	-1040.6	-571.3	-805.2	440.9	13738.0	7373.1

## Cost and Funding

### Funding Summary - F-35 Aircraft

#### Appropriation and Quantity Summary - F-35 Aircraft FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	37646.9	1170.4	1255.3	1375.1	1086.8	220.8	17.3	0.0	42772.6
Procurement	27969.8	5305.1	5848.5	7658.0	8771.1	10143.8	10543.3	206530.9	282770.5
MILCON	1235.0	56.0	207.0	66.7	228.6	328.5	175.7	2123.5	4421.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2015 Total	66851.7	6531.5	7310.8	9099.8	10086.5	10693.1	10736.3	208654.4	329964.1
PB 2014 Total	68494.9	7303.6	8891.2	10093.3	10528.7	11316.2	10355.3	199929.6	326912.8
Delta	-1643.2	-772.1	-1580.4	-993.5	-442.2	-623.1	381.0	8724.8	3051.3

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	14	0	0	0	0	0	0	0	0	14
Production	0	150	29	34	55	68	90	96	1921	2443
PB 2015 Total	14	150	29	34	55	68	90	96	1921	2457
PB 2014 Total	14	150	29	42	62	76	100	100	1884	2457
Delta	0	0	0	-8	-7	-8	-10	-4	37	0

## Funding Summary - F-35 Engine

### Appropriation and Quantity Summary - F-35 Engine FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	11325.1	283.6	258.8	212.3	44.5	0.7	0.0	0.0	12125.0
Procurement	5142.1	751.9	824.7	1225.5	1518.0	1895.9	2121.9	43015.5	56495.5
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 2015 Total	16467.2	1035.5	1083.5	1437.8	1562.5	1896.6	2121.9	43015.5	68620.5
PB 2014 Total	16509.4	1273.5	1196.3	1484.9	1691.6	2078.7	2062.0	38002.3	64298.7
Delta	-42.2	-238.0	-112.8	-47.1	-129.1	-182.1	59.9	5013.2	4321.8

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	14	0	0	0	0	0	0	0	0	14
Production	0	150	29	34	55	68	90	96	1921	2443
PB 2015 Total	14	150	29	34	55	68	90	96	1921	2457
PB 2014 Total	14	150	29	42	62	76	100	100	1884	2457
Delta	0	0	0	-8	-7	-8	-10	-4	37	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 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
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	--	--	--	--	--	--	67.5
1996	--	--	--	--	--	--	65.4
1997	--	--	--	--	--	--	202.3
1998	--	--	--	--	--	--	357.2
1999	--	--	--	--	--	--	366.5
2000	--	--	--	--	--	--	200.3
2001	--	--	--	--	--	--	274.3
2002	--	--	--	--	--	--	302.6
2003	--	--	--	--	--	--	1210.1
2004	--	--	--	--	--	--	1584.1
2005	--	--	--	--	--	--	1465.8
2006	--	--	--	--	--	--	1678.6
2007	--	--	--	--	--	--	1632.4
2008	--	--	--	--	--	--	1359.0
2009	--	--	--	--	--	--	1197.5
2010	--	--	--	--	--	--	1567.4
2011	--	--	--	--	--	--	715.4
2012	--	--	--	--	--	--	1262.2
2013	--	--	--	--	--	--	958.2
2014	--	--	--	--	--	--	550.2
2015	--	--	--	--	--	--	435.3
2016	--	--	--	--	--	--	438.3
2017	--	--	--	--	--	--	325.2
2018	--	--	--	--	--	--	115.2
2019	--	--	--	--	--	--	5.3
<b>Subtotal</b>	<b>5</b>	--	--	--	--	--	<b>18336.3</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	--	--	--	--	--	--	89.1
1996	--	--	--	--	--	--	84.9
1997	--	--	--	--	--	--	259.5
1998	--	--	--	--	--	--	454.5
1999	--	--	--	--	--	--	460.9
2000	--	--	--	--	--	--	248.3
2001	--	--	--	--	--	--	335.4
2002	--	--	--	--	--	--	366.3
2003	--	--	--	--	--	--	1443.6
2004	--	--	--	--	--	--	1838.4
2005	--	--	--	--	--	--	1657.5
2006	--	--	--	--	--	--	1840.8
2007	--	--	--	--	--	--	1747.3
2008	--	--	--	--	--	--	1428.6
2009	--	--	--	--	--	--	1242.9
2010	--	--	--	--	--	--	1602.8
2011	--	--	--	--	--	--	714.1
2012	--	--	--	--	--	--	1238.3
2013	--	--	--	--	--	--	925.5
2014	--	--	--	--	--	--	522.5
2015	--	--	--	--	--	--	405.8
2016	--	--	--	--	--	--	400.7
2017	--	--	--	--	--	--	291.5
2018	--	--	--	--	--	--	101.2
2019	--	--	--	--	--	--	4.6
<b>Subtotal</b>	<b>5</b>	--	--	--	--	--	<b>19705.0</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	--	--	--	--	--	--	78.7
1996	--	--	--	--	--	--	64.6
1997	--	--	--	--	--	--	195.6
1998	--	--	--	--	--	--	360.4
1999	--	--	--	--	--	--	378.9
2000	--	--	--	--	--	--	191.7
2001	--	--	--	--	--	--	274.3
2002	--	--	--	--	--	--	367.1
2003	--	--	--	--	--	--	1089.5
2004	--	--	--	--	--	--	1548.2
2005	--	--	--	--	--	--	1510.3
2006	--	--	--	--	--	--	1657.3
2007	--	--	--	--	--	--	1470.7
2008	--	--	--	--	--	--	1285.0
2009	--	--	--	--	--	--	1271.2
2010	--	--	--	--	--	--	1440.5
2011	--	--	--	--	--	--	989.9
2012	--	--	--	--	--	--	960.1
2013	--	--	--	--	--	--	1079.4
2014	--	--	--	--	--	--	602.1
2015	--	--	--	--	--	--	813.6
2016	--	--	--	--	--	--	934.2
2017	--	--	--	--	--	--	753.5
2018	--	--	--	--	--	--	102.5
2019	--	--	--	--	--	--	12.0
<b>Subtotal</b>	<b>9</b>	--	--	--	--	--	<b>19455.0</b>



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

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

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
1994	--	--	--	--	--	--	31.9
1995	--	--	--	--	--	--	103.9
1996	--	--	--	--	--	--	83.9
1997	--	--	--	--	--	--	250.9
1998	--	--	--	--	--	--	458.6
1999	--	--	--	--	--	--	476.5
2000	--	--	--	--	--	--	237.6
2001	--	--	--	--	--	--	335.4
2002	--	--	--	--	--	--	444.4
2003	--	--	--	--	--	--	1299.7
2004	--	--	--	--	--	--	1796.8
2005	--	--	--	--	--	--	1707.8
2006	--	--	--	--	--	--	1817.4
2007	--	--	--	--	--	--	1574.3
2008	--	--	--	--	--	--	1350.8
2009	--	--	--	--	--	--	1319.4
2010	--	--	--	--	--	--	1473.0
2011	--	--	--	--	--	--	988.1
2012	--	--	--	--	--	--	941.9
2013	--	--	--	--	--	--	1042.5
2014	--	--	--	--	--	--	571.8
2015	--	--	--	--	--	--	758.4
2016	--	--	--	--	--	--	854.0
2017	--	--	--	--	--	--	675.3
2018	--	--	--	--	--	--	90.1
2019	--	--	--	--	--	--	10.3
<b>Subtotal</b>	<b>9</b>	--	--	--	--	--	<b>20694.7</b>

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

<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>
1996	--	--	--	--	--	--	11.3
1997	--	--	--	--	--	--	67.1
1998	--	--	--	--	--	--	72.1
1999	--	--	--	--	--	--	49.0
2000	--	--	--	--	--	--	25.2
2001	--	--	--	--	--	--	9.5
2002	--	--	--	--	--	--	255.8
2003	--	--	--	--	--	--	298.7
2004	--	--	--	--	--	--	484.1
2005	--	--	--	--	--	--	734.3
2006	--	--	--	--	--	--	801.3
2007	--	--	--	--	--	--	635.3
2008	--	--	--	--	--	--	574.0
2009	--	--	--	--	--	--	236.0
2010	--	--	--	--	--	--	143.2
2011	--	--	--	--	--	--	171.9
2012	--	--	--	--	--	--	130.8
2013	--	--	--	--	--	--	148.5
2014	--	--	--	--	--	--	18.1
2015	--	--	--	--	--	--	6.4
2016	--	--	--	--	--	--	2.6
2017	--	--	--	--	--	--	8.1
2018	--	--	--	--	--	--	3.1
<b>Subtotal</b>	--	--	--	--	--	--	<b>4886.4</b>

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

<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>
1996	--	--	--	--	--	--	14.7
1997	--	--	--	--	--	--	86.1
1998	--	--	--	--	--	--	91.7
1999	--	--	--	--	--	--	61.6
2000	--	--	--	--	--	--	31.2
2001	--	--	--	--	--	--	11.6
2002	--	--	--	--	--	--	309.6
2003	--	--	--	--	--	--	356.3
2004	--	--	--	--	--	--	561.8
2005	--	--	--	--	--	--	830.3
2006	--	--	--	--	--	--	878.7
2007	--	--	--	--	--	--	680.0
2008	--	--	--	--	--	--	603.4
2009	--	--	--	--	--	--	244.9
2010	--	--	--	--	--	--	146.4
2011	--	--	--	--	--	--	171.6
2012	--	--	--	--	--	--	128.3
2013	--	--	--	--	--	--	143.4
2014	--	--	--	--	--	--	17.2
2015	--	--	--	--	--	--	6.0
2016	--	--	--	--	--	--	2.4
2017	--	--	--	--	--	--	7.3
2018	--	--	--	--	--	--	2.7
<b>Subtotal</b>	--	--	--	--	--	--	<b>5387.2</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	--	107.6	--	--	107.6	--	107.6
2007	2	428.5	--	80.8	509.3	91.1	600.4
2008	6	983.1	--	172.3	1155.4	131.5	1286.9
2009	7	1009.2	--	277.6	1286.8	175.8	1462.6
2010	10	1471.2	--	355.7	1826.9	277.7	2104.6
2011	22	2751.2	--	569.1	3320.3	679.6	3999.9
2012	18	2041.5	--	369.6	2411.1	773.5	3184.6
2013	19	2074.6	--	98.3	2172.9	532.6	2705.5
2014	19	2034.6	--	616.6	2651.2	433.0	3084.2
2015	26	2526.8	--	711.5	3238.3	537.2	3775.5
2016	44	4041.1	--	617.8	4658.9	648.0	5306.9
2017	48	4078.9	--	746.4	4825.3	665.7	5491.0
2018	60	4762.1	--	650.2	5412.3	707.3	6119.6
2019	60	4657.9	--	594.1	5252.0	732.7	5984.7
2020	60	4585.3	--	465.3	5050.6	771.5	5822.1
2021	80	5843.8	--	578.7	6422.5	893.9	7316.4
2022	80	5942.6	--	588.8	6531.4	896.7	7428.1
2023	80	6089.0	--	604.2	6693.2	969.2	7662.4
2024	80	6206.5	--	612.2	6818.7	890.6	7709.3
2025	80	6348.5	--	622.7	6971.2	880.6	7851.8
2026	80	6509.7	--	639.4	7149.1	921.3	8070.4
2027	80	6632.9	--	650.2	7283.1	938.8	8221.9
2028	80	6763.0	--	656.6	7419.6	770.9	8190.5
2029	80	6900.5	--	647.0	7547.5	932.8	8480.3
2030	80	7052.6	--	656.7	7709.3	922.8	8632.1
2031	80	7243.0	--	679.1	7922.1	989.0	8911.1
2032	80	7342.4	--	686.1	8028.5	738.2	8766.7
2033	80	7636.3	--	707.1	8343.4	647.6	8991.0
2034	80	7875.1	--	727.9	8603.0	411.1	9014.1

2035	80	8059.1	--	742.4	8801.5	414.8	9216.3
2036	80	8294.6	--	731.8	9026.4	360.7	9387.1
2037	80	7468.2	--	720.1	8188.3	374.1	8562.4
2038	2	556.3	--	34.2	590.5	48.0	638.5
<b>Subtotal</b>	<b>1763</b>	<b>156317.7</b>	<b>--</b>	<b>17610.5</b>	<b>173928.2</b>	<b>20158.3</b>	<b>194086.5</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	--	116.3	--	--	116.3	--	116.3
2007	2	452.5	--	85.4	537.9	96.2	634.1
2008	6	1022.9	--	179.3	1202.2	136.8	1339.0
2009	7	1035.6	--	284.9	1320.5	180.4	1500.9
2010	10	1478.3	--	357.5	1835.8	279.0	2114.8
2011	22	2707.2	--	560.0	3267.2	668.7	3935.9
2012	18	1977.7	--	358.0	2335.7	749.3	3085.0
2013	19	1976.5	--	93.7	2070.2	507.3	2577.5
2014	19	1904.0	--	577.0	2481.0	405.2	2886.2
2015	26	2320.0	--	653.3	2973.3	493.2	3466.5
2016	44	3638.1	--	556.2	4194.3	583.4	4777.7
2017	48	3600.2	--	658.8	4259.0	587.5	4846.5
2018	60	4120.8	--	562.6	4683.4	612.0	5295.4
2019	60	3951.6	--	504.0	4455.6	621.6	5077.2
2020	60	3813.7	--	387.0	4200.7	641.7	4842.4
2021	80	4765.1	--	471.9	5237.0	728.9	5965.9
2022	80	4750.7	--	470.6	5221.3	716.9	5938.2
2023	80	4772.3	--	473.5	5245.8	759.6	6005.4
2024	80	4769.0	--	470.3	5239.3	684.4	5923.7
2025	80	4782.4	--	469.2	5251.6	663.3	5914.9
2026	80	4807.7	--	472.3	5280.0	680.4	5960.4
2027	80	4802.6	--	470.9	5273.5	679.7	5953.2
2028	80	4800.8	--	466.2	5267.0	547.2	5814.2
2029	80	4802.4	--	450.2	5252.6	649.2	5901.8
2030	80	4812.0	--	448.1	5260.1	629.6	5889.7
2031	80	4845.0	--	454.2	5299.2	661.6	5960.8
2032	80	4815.2	--	450.0	5265.2	484.1	5749.3
2033	80	4909.7	--	454.6	5364.3	416.4	5780.7
2034	80	4964.0	--	458.9	5422.9	259.1	5682.0

2035	80	4980.4	--	458.7	5439.1	256.4	5695.5
2036	80	5025.4	--	443.4	5468.8	218.5	5687.3
2037	80	4436.0	--	427.6	4863.6	222.3	5085.9
2038	2	324.0	--	19.9	343.9	27.9	371.8
<b>Subtotal</b>	<b>1763</b>	<b>116280.1</b>	<b>--</b>	<b>13648.2</b>	<b>129928.3</b>	<b>15847.8</b>	<b>145776.1</b>

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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway (Aligned with Quantity) BY 2012 \$M</b>
2006	--	--
2007	2	452.5
2008	6	1022.9
2009	7	1035.6
2010	10	1478.3
2011	22	2707.2
2012	18	1977.7
2013	19	1976.5
2014	19	1904.0
2015	26	2320.0
2016	44	3638.1
2017	48	3600.2
2018	60	4120.8
2019	60	3951.6
2020	60	3813.7
2021	80	4765.1
2022	80	4790.7
2023	80	4772.3
2024	80	4769.0
2025	80	4782.4
2026	80	4807.7
2027	80	4802.6
2028	80	4800.8
2029	80	4802.4
2030	80	4812.0
2031	80	4845.0
2032	80	4815.2



2033	80	4909.7
2034	80	4964.0
2035	80	4980.4
2036	80	5064.2
2037	80	4434.8
2038	2	362.7

<b>Subtotal</b>	<b>1763</b>	<b>116280.1</b>
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**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	--	182.0	1244.0	206.1	1450.1
2010	20	2681.2	--	304.7	2985.9	560.9	3546.8
2011	10	1494.8	--	251.6	1746.4	431.8	2178.2
2012	13	1477.7	--	333.1	1810.8	746.7	2557.5
2013	10	1107.3	--	51.1	1158.4	557.3	1715.7
2014	10	1205.5	--	439.7	1645.2	575.7	2220.9
2015	8	883.5	--	762.3	1645.8	427.2	2073.0
2016	11	1196.2	--	547.7	1743.9	607.2	2351.1
2017	20	2012.0	--	672.1	2684.1	596.0	3280.1
2018	30	2769.5	--	568.9	3338.4	685.8	4024.2
2019	36	3332.3	--	523.8	3856.1	702.5	4558.6
2020	40	3419.2	--	350.2	3769.4	967.1	4736.5
2021	40	3394.8	--	361.6	3756.4	1101.8	4858.2
2022	40	3420.3	--	359.8	3780.1	932.7	4712.8
2023	40	3434.0	--	365.2	3799.2	815.1	4614.3
2024	40	3493.4	--	357.8	3851.2	867.2	4718.4
2025	40	3543.0	--	366.7	3909.7	770.2	4679.9
2026	40	3605.4	--	369.2	3974.6	636.9	4611.5
2027	40	3660.9	--	390.0	4050.9	430.5	4481.4
2028	40	3722.4	--	399.9	4122.3	381.2	4503.5
2029	40	3786.7	--	374.1	4160.8	326.1	4486.9
2030	40	3620.5	--	380.1	4000.6	313.8	4314.4
2031	21	2171.5	--	189.0	2360.5	217.0	2577.5
2032	20	2084.6	--	162.5	2247.1	127.6	2374.7
2033	18	1722.4	--	153.1	1875.5	112.9	1988.4
<b>Subtotal</b>	<b>680</b>	<b>65321.2</b>	<b>--</b>	<b>9254.8</b>	<b>74576.0</b>	<b>14108.0</b>	<b>88684.0</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	960.6	--	40.2	1000.8	11.1	1011.9
2009	7	1089.8	--	186.8	1276.6	211.5	1488.1
2010	20	2694.2	--	306.2	3000.4	563.6	3564.0
2011	10	1470.9	--	247.6	1718.5	424.9	2143.4
2012	13	1431.5	--	322.7	1754.2	723.3	2477.5
2013	10	1054.9	--	48.7	1103.6	530.9	1634.5
2014	10	1128.1	--	411.5	1539.6	538.7	2078.3
2015	8	811.2	--	699.9	1511.1	392.2	1903.3
2016	11	1076.9	--	493.2	1570.1	546.6	2116.7
2017	20	1775.9	--	593.2	2369.1	526.0	2895.1
2018	30	2396.5	--	492.3	2888.8	593.4	3482.2
2019	36	2827.0	--	444.3	3271.3	596.0	3867.3
2020	40	2843.8	--	291.3	3135.1	804.3	3939.4
2021	40	2768.2	--	294.9	3063.1	898.3	3961.4
2022	40	2734.3	--	287.6	3021.9	745.6	3767.5
2023	40	2691.4	--	286.2	2977.6	638.9	3616.5
2024	40	2684.3	--	274.9	2959.2	666.3	3625.5
2025	40	2669.0	--	276.2	2945.2	580.2	3525.4
2026	40	2662.7	--	272.7	2935.4	470.4	3405.8
2027	40	2650.7	--	282.4	2933.1	311.7	3244.8
2028	40	2642.4	--	283.9	2926.3	270.6	3196.9
2029	40	2635.3	--	260.3	2895.6	227.0	3122.6
2030	40	2470.3	--	259.3	2729.6	214.1	2943.7
2031	21	1452.6	--	126.3	1578.9	145.2	1724.1
2032	20	1367.1	--	106.5	1473.6	83.7	1557.3
2033	18	1107.4	--	98.4	1205.8	72.6	1278.4
<b>Subtotal</b>	<b>680</b>	<b>52199.3</b>	<b>--</b>	<b>7687.5</b>	<b>59886.8</b>	<b>11787.1</b>	<b>71673.9</b>

**Cost Quantity Information - F-35 Aircraft**  
**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	960.6
2009	7	1089.8
2010	20	2694.2
2011	10	1470.9
2012	13	1431.5
2013	10	1054.9
2014	10	1128.1
2015	8	811.2
2016	11	1076.9
2017	20	1775.9
2018	30	2396.5
2019	36	2827.0
2020	40	2843.8
2021	40	2768.2
2022	40	2734.3
2023	40	2691.4
2024	40	2684.3
2025	40	2669.0
2026	40	2662.7
2027	40	2650.7
2028	40	2642.4
2029	40	2635.3
2030	40	2470.3
2031	21	1486.7
2032	20	1401.2
2033	18	1141.5

<b>Subtotal</b>	<b>680</b>	<b>52199.3</b>
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**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	172.2
2013	94.9
2014	--
2015	140.3
2016	16.3
2017	213.9
2018	192.6
2019	84.2
2020	175.8
2021	105.2
2022	79.8
2023	--
2024	300.1
<b>Subtotal</b>	<b>2012.7</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	34.1
2011	368.5
2012	165.2
2013	89.5
2014	--
2015	127.4
2016	14.5
2017	186.6
2018	164.8
2019	70.6
2020	144.5
2021	84.8
2022	63.1
2023	--
2024	228.0
<b>Subtotal</b>	<b>1770.4</b>

All DoN MILCON funding is reflected in the Aircraft subprogram.

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

<b>Fiscal Year</b>	<b>Total Program 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	56.0
2015	66.7
2016	50.4
2017	14.7
2018	135.9
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	4.3
<b>Subtotal</b>	<b>2408.3</b>

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

<b>Fiscal Year</b>	<b>Total Program BY 2012 \$M</b>
2004	1.9
2005	11.1
2006	--
2007	--
2008	104.1
2009	118.8
2010	125.0
2011	136.1
2012	23.3
2013	12.7
2014	51.8
2015	60.5
2016	44.9
2017	12.8
2018	80.4
2019	76.7
2020	110.7
2021	53.7
2022	57.8
2023	129.4
2024	108.1
2025	90.9
2026	86.4
2027	93.0
2028	71.4
2029	70.7
2030	63.8
2031	47.4
2032	46.2
2033	23.8

2034	15.5
2035	2.6
<b>Subtotal</b>	<b>1931.5</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	--	--	--	--	--	--	409.8
2003	--	--	--	--	--	--	400.5
2004	--	--	--	--	--	--	435.8
2005	--	--	--	--	--	--	614.3
2006	--	--	--	--	--	--	586.3
2007	--	--	--	--	--	--	441.6
2008	--	--	--	--	--	--	596.0
2009	--	--	--	--	--	--	544.6
2010	--	--	--	--	--	--	466.1
2011	--	--	--	--	--	--	216.2
2012	--	--	--	--	--	--	101.8
2013	--	--	--	--	--	--	157.5
2014	--	--	--	--	--	--	62.1
2015	--	--	--	--	--	--	100.1
2016	--	--	--	--	--	--	84.3
2017	--	--	--	--	--	--	1.9
2018	--	--	--	--	--	--	0.2
<b>Subtotal</b>	<b>5</b>	--	--	--	--	--	<b>5592.9</b>

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

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	--	--	--	--	--	--	21.7
1996	--	--	--	--	--	--	20.6
1997	--	--	--	--	--	--	63.2
1998	--	--	--	--	--	--	110.8
1999	--	--	--	--	--	--	112.4
2000	--	--	--	--	--	--	60.5
2001	--	--	--	--	--	--	81.8
2002	--	--	--	--	--	--	496.0
2003	--	--	--	--	--	--	477.8
2004	--	--	--	--	--	--	505.8
2005	--	--	--	--	--	--	694.7
2006	--	--	--	--	--	--	643.0
2007	--	--	--	--	--	--	472.7
2008	--	--	--	--	--	--	626.5
2009	--	--	--	--	--	--	565.2
2010	--	--	--	--	--	--	476.6
2011	--	--	--	--	--	--	215.8
2012	--	--	--	--	--	--	99.9
2013	--	--	--	--	--	--	152.1
2014	--	--	--	--	--	--	59.0
2015	--	--	--	--	--	--	93.3
2016	--	--	--	--	--	--	77.1
2017	--	--	--	--	--	--	1.7
2018	--	--	--	--	--	--	0.2
<b>Subtotal</b>	<b>5</b>	--	--	--	--	--	<b>6128.4</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	--	--	--	--	--	--	250.9
2012	--	--	--	--	--	--	187.6
2013	--	--	--	--	--	--	202.0
2014	--	--	--	--	--	--	221.5
2015	--	--	--	--	--	--	158.7
2016	--	--	--	--	--	--	128.0
2017	--	--	--	--	--	--	42.6
2018	--	--	--	--	--	--	0.5
<b>Subtotal</b>	<b>9</b>	--	--	--	--	--	<b>6192.0</b>

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

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

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
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	--	--	--	--	--	--	455.8
2011	--	--	--	--	--	--	250.4
2012	--	--	--	--	--	--	184.1
2013	--	--	--	--	--	--	195.1
2014	--	--	--	--	--	--	210.3
2015	--	--	--	--	--	--	147.9
2016	--	--	--	--	--	--	117.0
2017	--	--	--	--	--	--	38.2
2018	--	--	--	--	--	--	0.4
<b>Subtotal</b>	<b>9</b>	--	--	--	--	--	<b>6735.8</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
1994	--	--	--	--	--	--	5.7
1995	--	--	--	--	--	--	13.4
1996	--	--	--	--	--	--	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 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
1994	--	--	--	--	--	--	7.7
1995	--	--	--	--	--	--	17.7
1996	--	--	--	--	--	--	5.2
<b>Subtotal</b>	--	--	--	--	--	--	<b>30.6</b>

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

<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>
1996	--	--	--	--	--	--	2.7
1997	--	--	--	--	--	--	3.9
1998	--	--	--	--	--	--	5.1
1999	--	--	--	--	--	--	5.7
2000	--	--	--	--	--	--	1.8
2001	--	--	--	--	--	--	0.5
2002	--	--	--	--	--	--	43.3
2003	--	--	--	--	--	--	124.3
2004	--	--	--	--	--	--	54.1
2005	--	--	--	--	--	--	0.3
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	75.0
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	0.3
<b>Subtotal</b>	--	--	--	--	--	--	<b>317.0</b>

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

<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>
1996	--	--	--	--	--	--	3.5
1997	--	--	--	--	--	--	5.0
1998	--	--	--	--	--	--	6.5
1999	--	--	--	--	--	--	7.2
2000	--	--	--	--	--	--	2.2
2001	--	--	--	--	--	--	0.6
2002	--	--	--	--	--	--	52.4
2003	--	--	--	--	--	--	148.3
2004	--	--	--	--	--	--	62.8
2005	--	--	--	--	--	--	0.3
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	80.3
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	0.3
<b>Subtotal</b>	--	--	--	--	--	--	<b>369.4</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	--	65.7	341.0	123.0	464.0
2013	19	262.5	--	11.9	274.4	89.6	364.0
2014	19	282.1	--	31.2	313.3	47.5	360.8
2015	26	359.9	--	17.4	377.3	116.2	493.5
2016	44	600.9	--	25.2	626.1	136.6	762.7
2017	48	640.6	--	47.3	687.9	140.7	828.6
2018	60	772.4	--	39.5	811.9	169.2	981.1
2019	60	775.3	--	38.1	813.4	190.2	1003.6
2020	60	814.3	--	32.5	846.8	175.6	1022.4
2021	80	1046.6	--	41.8	1088.4	244.2	1332.6
2022	80	1075.9	--	42.1	1118.0	215.5	1333.5
2023	80	1114.8	--	43.8	1158.6	267.4	1426.0
2024	80	1143.7	--	43.7	1187.4	247.9	1435.3
2025	80	1175.5	--	44.1	1219.6	214.9	1434.5
2026	80	1213.3	--	45.8	1259.1	264.5	1523.6
2027	80	1242.1	--	45.5	1287.6	275.4	1563.0
2028	80	1272.8	--	45.7	1318.5	216.3	1534.8
2029	80	1304.8	--	48.3	1353.1	262.1	1615.2
2030	80	1339.5	--	48.7	1388.2	280.8	1669.0
2031	80	1388.8	--	50.9	1439.7	294.6	1734.3
2032	80	1431.3	--	49.6	1480.9	202.7	1683.6
2033	80	1482.5	--	50.9	1533.4	197.6	1731.0
2034	80	1548.0	--	51.7	1599.7	174.6	1774.3

2035	80	1590.9	--	52.8	1643.7	178.8	1822.5
2036	80	1635.1	--	51.7	1686.8	154.7	1841.5
2037	80	1494.4	--	51.2	1545.6	161.6	1707.2
2038	2	49.5	--	2.7	52.2	20.7	72.9
<b>Subtotal</b>	<b>1763</b>	<b>28170.6</b>	<b>--</b>	<b>1389.8</b>	<b>29560.4</b>	<b>5350.5</b>	<b>34910.9</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	--	65.6	195.9	34.2	230.1
2010	10	177.6	--	72.9	250.5	59.4	309.9
2011	22	347.6	--	90.1	437.7	134.4	572.1
2012	18	266.7	--	63.6	330.3	119.2	449.5
2013	19	250.1	--	11.3	261.4	85.4	346.8
2014	19	264.0	--	29.2	293.2	44.4	337.6
2015	26	330.4	--	16.0	346.4	106.7	453.1
2016	44	541.0	--	22.7	563.7	122.9	686.6
2017	48	565.4	--	41.7	607.1	124.2	731.3
2018	60	668.4	--	34.2	702.6	146.4	849.0
2019	60	657.7	--	32.3	690.0	161.4	851.4
2020	60	677.3	--	27.0	704.3	146.1	850.4
2021	80	853.4	--	34.1	887.5	199.1	1086.6
2022	80	860.1	--	33.7	893.8	172.2	1066.0
2023	80	873.7	--	34.3	908.0	209.6	1117.6
2024	80	878.8	--	33.6	912.4	190.5	1102.9
2025	80	885.5	--	33.2	918.7	161.9	1080.6
2026	80	896.1	--	33.8	929.9	195.3	1125.2
2027	80	899.4	--	32.9	932.3	199.4	1131.7
2028	80	903.5	--	32.4	935.9	153.6	1089.5
2029	80	908.1	--	33.6	941.7	182.4	1124.1
2030	80	913.9	--	33.2	947.1	191.7	1138.8
2031	80	929.0	--	34.0	963.0	197.1	1160.1
2032	80	938.7	--	32.5	971.2	132.9	1104.1
2033	80	953.2	--	32.7	985.9	127.0	1112.9
2034	80	975.8	--	32.6	1008.4	110.0	1118.4

2035	80	983.1	--	32.6	1015.7	110.6	1126.3
2036	80	990.6	--	31.3	1021.9	93.8	1115.7
2037	80	887.7	--	30.4	918.1	96.0	1014.1
2038	2	28.8	--	1.6	30.4	12.1	42.5
<b>Subtotal</b>	<b>1763</b>	<b>20625.3</b>	<b>--</b>	<b>1112.8</b>	<b>21738.1</b>	<b>4081.3</b>	<b>25819.4</b>

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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway (Aligned with Quantity) BY 2012 \$M</b>
2006	--	--
2007	2	50.2
2008	6	128.6
2009	7	130.3
2010	10	177.2
2011	22	347.6
2012	18	266.7
2013	19	250.1
2014	19	264.0
2015	26	330.4
2016	44	541.0
2017	48	565.4
2018	60	668.4
2019	60	657.7
2020	60	677.3
2021	80	853.4
2022	80	860.1
2023	80	873.7
2024	80	878.8
2025	80	885.5
2026	80	896.1
2027	80	899.4
2028	80	903.5
2029	80	908.1
2030	80	913.9
2031	80	929.0
2032	80	938.7



2033	80	953.2
2034	80	975.8
2035	80	983.1
2036	80	994.1
2037	80	891.2
2038	2	32.8
<b>Subtotal</b>	<b>1763</b>	<b>20625.3</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	--	118.4	717.4	127.6	845.0
2011	10	400.5	--	112.6	513.1	122.3	635.4
2012	13	191.4	--	57.7	249.1	62.0	311.1
2013	10	236.9	--	26.6	263.5	169.8	433.3
2014	10	227.1	--	21.6	248.7	142.4	391.1
2015	8	225.5	--	32.2	257.7	73.5	331.2
2016	11	342.0	--	20.3	362.3	100.5	462.8
2017	20	545.5	--	31.5	577.0	112.4	689.4
2018	30	752.3	--	28.1	780.4	134.4	914.8
2019	36	850.9	--	127.6	978.5	139.8	1118.3
2020	40	891.8	--	80.8	972.6	215.0	1187.6
2021	40	895.9	--	72.2	968.1	257.5	1225.6
2022	40	917.5	--	74.3	991.8	186.9	1178.7
2023	40	932.8	--	73.5	1006.3	212.6	1218.9
2024	40	960.9	--	87.1	1048.0	200.7	1248.7
2025	40	982.5	--	82.8	1065.3	203.7	1269.0
2026	40	1010.8	--	86.6	1097.4	174.4	1271.8
2027	40	1032.0	--	66.9	1098.9	108.2	1207.1
2028	40	1055.2	--	63.0	1118.2	102.5	1220.7
2029	40	1079.5	--	63.7	1143.2	97.1	1240.3
2030	40	1019.3	--	56.7	1076.0	96.8	1172.8
2031	21	389.3	--	41.7	431.0	57.6	488.6
2032	20	358.9	--	43.7	402.6	46.0	448.6
2033	18	295.5	--	42.0	337.5	42.4	379.9
<b>Subtotal</b>	<b>680</b>	<b>16764.5</b>	<b>--</b>	<b>1567.2</b>	<b>18331.7</b>	<b>3252.9</b>	<b>21584.6</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	256.1	--	1.4	257.5	1.2	258.7
2009	7	305.8	--	55.7	361.5	67.3	428.8
2010	20	601.9	--	119.0	720.9	128.2	849.1
2011	10	394.1	--	110.8	504.9	120.3	625.2
2012	13	185.4	--	56.0	241.4	60.0	301.4
2013	10	225.7	--	25.3	251.0	161.8	412.8
2014	10	212.5	--	20.2	232.7	133.3	366.0
2015	8	207.0	--	29.6	236.6	67.5	304.1
2016	11	307.9	--	18.3	326.2	90.5	416.7
2017	20	481.5	--	27.8	509.3	99.2	608.5
2018	30	651.0	--	24.3	675.3	116.3	791.6
2019	36	721.9	--	108.2	830.1	118.6	948.7
2020	40	741.7	--	67.2	808.9	178.9	987.8
2021	40	730.5	--	58.9	789.4	210.0	999.4
2022	40	733.5	--	59.4	792.9	149.4	942.3
2023	40	731.1	--	57.6	788.7	166.6	955.3
2024	40	738.3	--	66.9	805.2	154.3	959.5
2025	40	740.1	--	62.4	802.5	153.5	956.0
2026	40	746.5	--	64.0	810.5	128.8	939.3
2027	40	747.2	--	48.4	795.6	78.4	874.0
2028	40	749.1	--	44.7	793.8	72.7	866.5
2029	40	751.3	--	44.3	795.6	67.6	863.2
2030	40	695.5	--	38.7	734.2	66.0	800.2
2031	21	260.4	--	27.9	288.3	38.5	326.8
2032	20	235.4	--	28.6	264.0	30.2	294.2
2033	18	190.0	--	27.0	217.0	27.3	244.3
<b>Subtotal</b>	<b>680</b>	<b>13370.3</b>	<b>--</b>	<b>1292.6</b>	<b>14662.9</b>	<b>2686.4</b>	<b>17349.3</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	256.1
2009	7	305.8
2010	20	601.9
2011	10	394.1
2012	13	185.4
2013	10	225.7
2014	10	212.5
2015	8	207.0
2016	11	307.9
2017	20	481.5
2018	30	651.0
2019	36	721.9
2020	40	741.7
2021	40	730.5
2022	40	733.5
2023	40	731.1
2024	40	738.3
2025	40	740.1
2026	40	746.5
2027	40	747.2
2028	40	749.1
2029	40	751.3
2030	40	695.5
2031	21	270.0
2032	20	245.0
2033	18	199.7

<b>Subtotal</b>	<b>680</b>	<b>13370.3</b>
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## 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	336
<b>Reference</b>	Original MS B Acquisition Decision Memorandum (ADM)	Based on March 2012 MS B Re-approval 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 Under Secretary of Defense (Acquisition Technology and Logistics) approved the LRIP quantity of 465 (in six LRIP lots) in the original MS B ADM dated October 26, 2001. The LRIP quantity has been revised to 336 (in eleven LRIP lots) based on the FY 2015 PB.

### F-35 Engine

	Initial LRIP Decision	Current Total LRIP
<b>Approval Date</b>	10/26/2001	2/24/2010
<b>Approved Quantity</b>	465	336
<b>Reference</b>	Original MS B Acquisition Decision Memorandum (ADM)	Based on March 2012 MS B Re-approval 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 Under Secretary of Defense (Acquisition Technology and Logistics) approved the LRIP quantity of 465 (in six LRIP lots) in the original MS B ADM dated October 26, 2001. The LRIP quantity has been revised to 336 (in eleven LRIP lots) based on the FY 2015 PB.

## Foreign Military Sales

### F-35 Aircraft

Country	Date of Sale	Quantity	Total Cost \$M	Memo
Japan	9/2/2013	6	1300.0	Japan signed an amendment to add two F-35A's delivered from a Japan F-35 Final Assembly and Checkout in 2017. There is an option to purchase 36 additional F-35A aircraft.
Israel	9/30/2010	19	2623.3	All 19 aircraft will be the F-35A aircraft.

### F-35 Engine

FMS information for the F-35 Engine subprogram are reflected in the F-35 Aircraft subprogram.

## Nuclear Costs

### F-35 Aircraft

None

### F-35 Engine

None

## Unit Cost

### F-35 Aircraft

#### Unit Cost Report

	BY2012 \$M	BY2012 \$M	
Unit Cost	Current UCR Baseline (MAR 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	276482.2	267060.6	
Quantity	2458	2457	
Unit Cost	112.483	108.694	-3.37
Average Procurement Unit Cost (APUC)			
Cost	224333.7	217450.0	
Quantity	2443	2443	
Unit Cost	91.827	89.009	-3.07

	BY2012 \$M	BY2012 \$M	
Unit Cost	Revised Original UCR Baseline (MAR 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	276482.2	267060.6	
Quantity	2458	2457	
Unit Cost	112.483	108.694	-3.37
Average Procurement Unit Cost (APUC)			
Cost	224333.7	217450.0	
Quantity	2443	2443	
Unit Cost	91.827	89.009	-3.07

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 FMS aircraft and 612 International Partner aircraft.

F-35A (Conventional Take Off and Landing) URF - \$66.0 M (BY 2012)

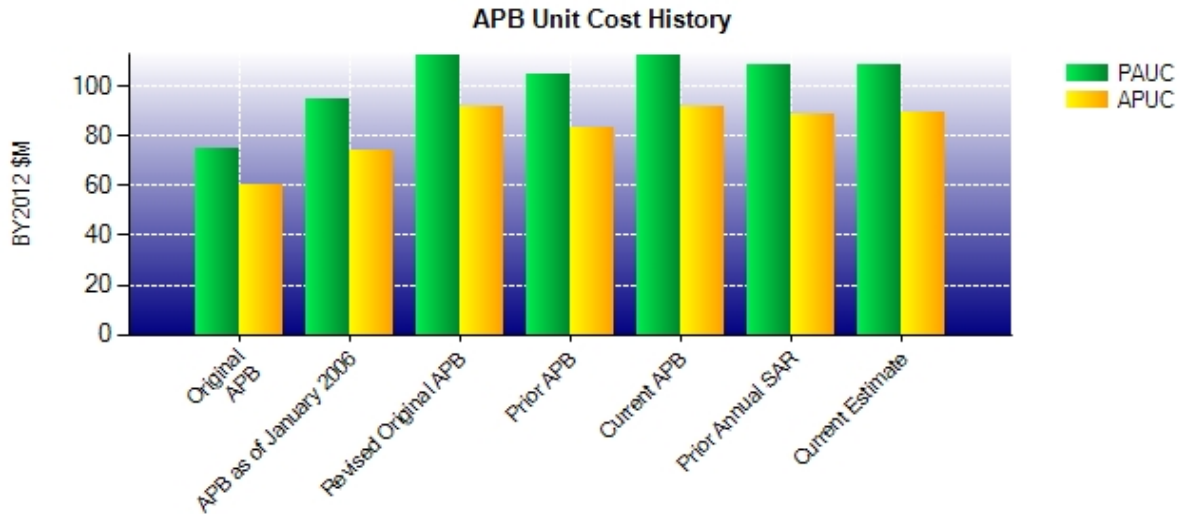
F-35B (Short Takeoff and Vertical Landing) URF - \$76.8M (BY 2012)

F-35C (Carrier Variant) URF - \$78.2 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 2012	108.235	88.244	133.054	114.184
Current Estimate	DEC 2013	108.694	89.009	134.296	115.747

**SAR Unit Cost History**

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

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
135.065	2.643	0.000	1.028	0.000	-3.427	0.000	-1.013	-0.769	134.296

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

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
115.697	2.580	0.000	1.034	0.000	-2.545	0.000	-1.019	0.050	115.747

**SAR Baseline History**

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	N/A	NOV 1996	N/A	NOV 1996
Milestone B	MAR 2001	NOV 2011	N/A	MAR 2012
Milestone C	TBD	APR 2019	N/A	APR 2019
IOC	TBD	TBD	N/A	JUL 2015
Total Cost (TY \$M)	24800.0	331855.2	N/A	329964.1
Total Quantity	N/A	2457	N/A	2457
Prog. Acq. Unit Cost (PAUC)	N/A	135.065	N/A	134.296

The Service IOC reflected in the above table is the United States Marine Corps Objective date. In addition, the Air Force IOC objective date is August 2016, and the Navy IOC objective date is August 2018.

## F-35 Engine

### Unit Cost Report

	BY2012 \$M	BY2012 \$M	
Unit Cost	Current UCR Baseline (MAR 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	53916.4	56432.9	
Quantity	2458	2457	
Unit Cost	21.935	22.968	+4.71
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	42332.9	43168.7	
Quantity	2443	2443	
Unit Cost	17.328	17.670	+1.97

	BY2012 \$M	BY2012 \$M	
Unit Cost	Original UCR Baseline (MAR 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	53916.4	56432.9	
Quantity	2458	2457	
Unit Cost	21.935	22.968	+4.71
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	42332.9	43168.7	
Quantity	2443	2443	
Unit Cost	17.328	17.670	+1.97

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 FMS engines and 612 International Partner engines.

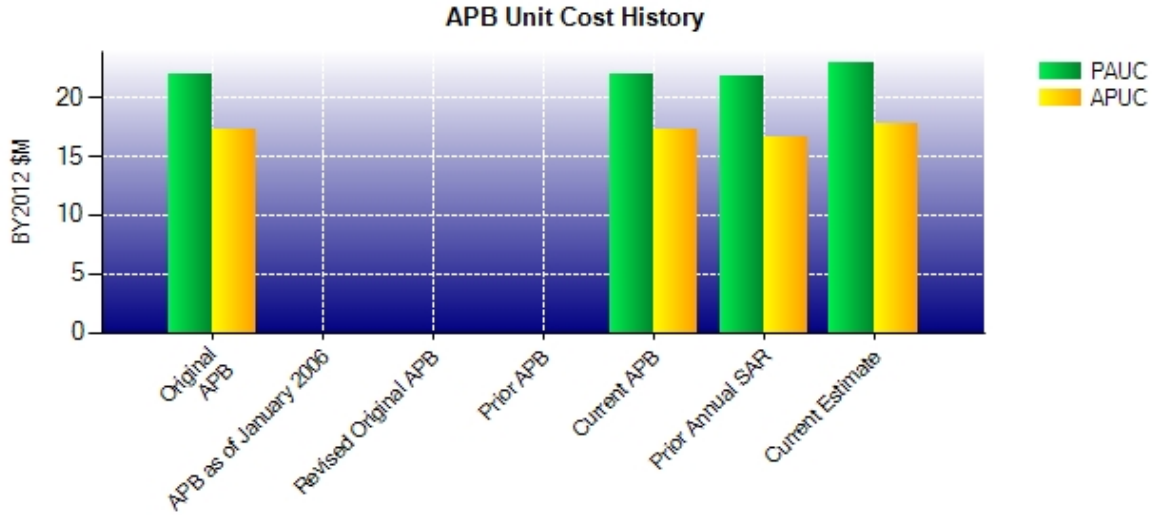
F-35A (Conventional Take Off and Landing) URF - \$11.7 M (BY 2012)

F-35B (Short Takeoff and Vertical Landing) URF - \$28.0 M (BY 2012)

F-35C (Carrier Variant) URF - \$11.5 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 2012	21.771	16.599	26.170	21.480
<b>Current Estimate</b>	DEC 2013	22.968	17.670	27.929	23.125

## SAR Unit Cost History

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

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
25.990	0.492	0.000	0.190	0.000	1.337	0.000	-0.080	1.939	27.929

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

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
21.708	0.483	0.000	0.191	0.000	0.824	0.000	-0.081	1.417	23.125

## SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current 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	68620.5
Total Quantity	N/A	2457	N/A	2457
Prog. Acq. Unit Cost (PAUC)	N/A	25.990	N/A	27.929

**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	+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
Current Changes				
Economic	-82.3	-426.0	-14.4	-522.7
Quantity	--	--	--	--
Schedule	--	+1039.1	--	+1039.1
Engineering	--	--	--	--
Estimating	-505.8	+3912.5	-164.8	+3241.9
Other	--	--	--	--
Support	--	-707.0	--	-707.0
Subtotal	-588.1	+3818.6	-179.2	+3051.3
Adjustments	--	--	--	--
Total Changes	-1637.5	+122.7	-376.3	-1891.1
CE - Cost Variance	42772.6	282770.5	4421.0	329964.1
CE - Cost & Funding	42772.6	282770.5	4421.0	329964.1

<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	-1524.6	-7016.7	-270.2	-8811.5
Other	--	--	--	--
Support	--	-1737.2	--	-1737.2
Subtotal	-1524.6	-8753.9	-270.2	-10548.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-548.8	+2590.1	-195.9	+1845.4
Other	--	--	--	--
Support	--	-719.1	--	-719.1
Subtotal	-548.8	+1871.0	-195.9	+1126.3
Adjustments	--	--	--	--
Total Changes	-2073.4	-6882.9	-466.1	-9422.4
CE - Cost Variance	45908.7	217450.0	3701.9	267060.6
CE - Cost & Funding	45908.7	217450.0	3701.9	267060.6

Previous Estimate: December 2012

<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	-82.3
Adjustment for current and prior escalation. (Estimating)	+46.0	+47.5
Realignment of costs between Aircraft subprogram and Engine subprogram (Air Force) (Estimating)	-174.9	-155.0
Increase due to realignment of program funding and Actual Funding Investment (Air Force) (Estimating)	+5.1	+16.9
Realignment of costs between Aircraft subprogram and Engine subprogram (Navy) (Estimating)	-21.9	-22.7
Decrease due to realignment of program funding, Congressional reductions and Actual Funding Investment (Navy) (Estimating)	-368.1	-364.1
Realignment of costs between Aircraft subprogram and Engine subprogram (International) (Estimating)	-35.0	-28.4
<b>RDT&amp;E Subtotal</b>	<b>-548.8</b>	<b>-588.1</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	-426.0
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate) and extended program from FY 2037 to FY 2038 (Air Force) (Schedule)	0.0	+158.3
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate) and extended program from FY 2032 to FY 2033 (Navy) (Schedule)	0.0	+880.8
Adjustment for current and prior escalation. (Estimating)	+160.6	+167.1
Revised estimate of subcontractor cost due to the incorporation of the latest actuals from early LRIP lots (Air Force) (Estimating)	-516.3	-759.5
Revised estimate of subcontractor cost due to the incorporation of the latest actuals from early LRIP lots (Navy) (Estimating)	-189.1	-347.0
Revised estimate of Airframe cost due to the incorporation of the latest actuals from early LRIP lots (Air Force) (Estimating)	+899.5	+1323.5
Revised estimate of Airframe cost due to the incorporation of the latest actuals from early LRIP lots (Navy) (Estimating)	-379.6	-695.7
Increase due to the incorporation of latest Prime and subcontractor Labor Rates and exchange rates (Air Force) (Estimating)	+2386.5	+3512.6
Increase due to the incorporation of latest Prime and subcontractor Labor Rates and exchange rates (Navy) (Estimating)	+854.2	+1563.8
Increase due to slower International Partner (IP) procurement quantity profile (Air Force) (Estimating)	+566.1	+832.9
Increase due to slower IP procurement quantity profile (Navy) (Estimating)	+104.4	+191.4
Updated methodologies, material costs, and learning curves (Air Force) (Estimating)	-1381.0	-2032.3
Updated methodologies, material costs, and learning curves (Navy) (Estimating)	+84.8	+155.7
Adjustment for current and prior escalation. (Support)	+44.3	+46.7
Decrease in Other Support due to maturation of technical baseline, definition of		



customer requirements, and further definition of Service beddown plans (Air Force) (Support)	-191.4	-531.5
Decrease in Other Support due to maturation of technical baseline, definition of customer requirements, and further definition of Service beddown plans (Navy) (Support)	-724.6	-943.8
Increase in Initial Spares due to revised estimate of required risk funding (Air Force) (Support)	+153.8	+551.6
Increase in Initial Spares due to revised estimate of required risk funding (Navy) (Support)	-1.2	+170.0
Procurement Subtotal	+1871.0	+3818.6

<b>MILCON</b>	<b>\$M</b>	
<b>Current Change Explanations</b>	<b>Base Year</b>	<b>Then Year</b>
Revised escalation indices. (Economic)	N/A	-14.4
Adjustment for current and prior escalation. (Estimating)	+8.6	+9.1
Increase due to revised estimate of MILCON requirements (Air Force) (Estimating)	+23.1	+64.4
Decrease due to revised estimate of MILCON requirements (Navy) (Estimating)	-227.6	-238.3
MILCON Subtotal	-195.9	-179.2

**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	+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
Current Changes				
Economic	-11.7	-79.8	--	-91.5
Quantity	--	--	--	--
Schedule	--	+196.1	--	+196.1
Engineering	--	--	--	--
Estimating	+314.5	+3606.9	--	+3921.4
Other	--	--	--	--
Support	--	+295.8	--	+295.8
Subtotal	+302.8	+4019.0	--	+4321.8
Total Changes	+1301.3	+3462.6	--	+4763.9
CE - Cost Variance	12125.0	56495.5	--	68620.5
CE - Cost & Funding	12125.0	56495.5	--	68620.5

<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	+1245.4	-1446.4	--	-201.0
Other	--	--	--	--
Support	--	-335.4	--	-335.4
Subtotal	+1245.4	-1781.8	--	-536.4
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+323.6	+2517.8	--	+2841.4
Other	--	--	--	--
Support	--	+99.8	--	+99.8
Subtotal	+323.6	+2617.6	--	+2941.2
Total Changes	+1569.0	+835.8	--	+2404.8
CE - Cost Variance	13264.2	43168.7	--	56432.9
CE - Cost & Funding	13264.2	43168.7	--	56432.9

Previous Estimate: December 2012

<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	-11.7
Adjustment for current and prior escalation. (Estimating)	+8.7	+8.9
Realignment of costs between Aircraft subprogram and Engine subprogram (Air Force) (Estimating)	+174.4	+155.0
Decrease due to realignment of program funding, Congressional Reductions, and Actual Funding Investment (Air Force) (Estimating)	-104.7	-108.4
Realignment of costs between Aircraft subprogram and Engine subprogram (Navy) (Estimating)	+21.9	+22.7
Decrease due to realignment of program funding, Congressional Reductions, and Actual Funding Investment (Navy) (Estimating)	+191.7	+208.6
Realignment of costs between Aircraft subprogram and Engine subprogram (International) (Estimating)	+30.7	+27.7
Realignment of cost between Aircraft subprogram and Engine subprogram (International) (Estimating)	+0.9	0.0
<b>RDT&amp;E Subtotal</b>	<b>+323.6</b>	<b>+302.8</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	-79.8
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate) and extended program from FY 2037 to FY 2038 (Air Force) (Schedule)	0.0	+30.0
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate) and extended program from FY 2032 to FY 2033 (Navy) (Schedule)	0.0	+166.1
Adjustment for current and prior escalation. (Estimating)	+26.0	+27.5
Updated exchange rates (Air Force) (Estimating)	+944.7	+1384.5
Updated exchange rates (Navy) (Estimating)	+253.8	+350.8
Increase due to incorporation of latest actual costs from LRIP lots (Air Force) (Estimating)	+630.6	+923.8
Increase due to incorporation of latest actual costs from LRIP lots (Navy) (Estimating)	+591.8	+818.0
Increase due to slower International procurement quantity profile (Air Force) (Estimating)	+57.1	+83.4
Increase due to slower International procurement quantity profile (Navy) (Estimating)	+13.8	+18.9
Adjustment for current and prior escalation. (Support)	+8.5	+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)	+2.0	-34.6
Increase in Other Support due to maturation of technical baseline, definition of customer requirements, and further definition of Service beddown plans (Navy) (Support)	+23.4	+3.0
Increase in Initial Support due to revised estimate of required risk funding (Air Force) (Support)	+59.2	+239.6

Increase in Initial Support due to revised estimate of required risk funding (Navy) (Support)	+6.7	+79.4
Procurement Subtotal	+2617.6	+4019.0

## Contracts

### 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	20029.8	N/A	14	34139.0	33631.6

### Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to execution of contract modifications that adjusted tasks, estimated cost and available fee; and the removal of unearned award fee.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-433.6	-245.5
Previous Cumulative Variances	-392.6	-221.0
Net Change	-41.0	-24.5

### Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to additional effort in Mission Systems software development and test, additional contractor Program Office resources, additional Indirect/Overhead expense (which follows direct account performance) and increased Training Systems effort. Material transfer in Production Operations was a favorable offset.

The unfavorable net change in the schedule variance is due to delayed Mission Systems software builds, delayed Weapons Integration progress, and delayed Training Systems deliveries. Indirect/Overhead and Laboratory Development were favorable offsets.

### Contract Comments

This contract is more than 90% complete; therefore, this is the final report for this contract.

The Estimated Price at Completion reflects the revised program schedule and content following the Technical Baseline Review (TBR) that was conducted in 2010. The TBR recommendations are the basis of a program replan which resulted in formal contractual implementation of an Over Target Baseline (OTB) (OTB #3) and an OTS in 2013. A Schedule Risk Assessment was completed in January 2014. The Estimated Price at Completion may be adjusted as impacts of the program restructure and TBR are finalized.

**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	6610.1	N/A	33	8211.8	8234.0

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to execution of contract modifications that adjusted tasks, estimated cost and fee.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	+19.5	-40.1
Previous Cumulative Variances	-20.0	-26.8
Net Change	+39.5	-13.3

**Cost and Schedule Variance Explanations**

The favorable net change in the cost variance is due to favorable retroactive 2010 and 2012 general and administrative rate adjustments, less labor resources and more cost effective skill mix to support Flight Test, labor efficiencies and less engineering requirements for Lift Fan work scope and less labor required than planned in Propulsion System Analysis due to a number of issues impacting flight test flying hours.

The unfavorable net change in the schedule variance is due to late spares and manufacturing priorities in Flight Test Facilities and Logistics Support, delays with Rolls Royce Affordability tasks and Lift Fan testing delays and late hardware.

**Contract Comments**

This contract is more than 90% complete; therefore, this is the final report for this contract.

Schedule extensions and cost overruns associated with the approved program restructures that were executed in 2008 and 2011, all of which incorporated Over Target Baselines.

**Appropriation: Procurement**

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

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
3899.2	N/A	32	5599.9	N/A	32	5754.0	5708.8

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications that drove the approximately \$1.7 billion Target Price changes to include: Sustainment definitization in January 2012 (\$765M increase to Target Price), Production Non-Recurring definitization and increased Concurrency Cap for the aircraft Contract Line Items (CLINs) in May 2012 (\$917M increase to Target Price), and Northrop Grumman Corporation Block Load Unwind in December 2012 (\$52M increase to Target Price).

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-344.2	-104.2
Previous Cumulative Variances	-372.2	-199.3
Net Change	+28.0	+95.1

**Cost and Schedule Variance Explanations**

The favorable net change in the cost variance is due to the implementation of material-related corrective actions that enabled performance to be earned for previously issued hardware.

The favorable net change in the schedule variance is due to the implementation of material-related corrective actions that enabled performance to be earned for previously issued hardware. The favorable net change is also due to schedule recovery for previously late aircraft (all aircraft were DD 250'd as of month-end November 2013).

**Contract Comments**

This contract is more than 90% complete; therefore, this is the final report for this contract.

As a whole, the LRIP 4 CLINs consist of multiple contract types including Fixed Price Incentive Fee as well as Cost Plus Incentive Fee and Cost Plus Fixed-Fee. For this reason, the overall contract type is mixed and there is not a true contract ceiling.



**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	May 13, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1133.9	1229.9	37	1156.3	1231.6	37	1161.4	1171.4

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the following contract modifications: Netherlands engine, laser measurement, class spacers and thermal sensor engineering changes.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-41.6	-4.6
Previous Cumulative Variances	-40.0	-56.4
Net Change	-1.6	+51.8

**Cost and Schedule Variance Explanations**

The unfavorable net change in the cost variance is due to cost increases for spare parts and raw material increases for High Pressure Compressor Variable Vanes and Integrally Bladed Rotors.

The favorable net change in the schedule variance is due to schedule recovery from previously late to baseline plan for hardware, spare parts, spare modules, support equipment and tooling.

**Contract Comments**

This contract is more than 90% complete; therefore, this is the final report for this contract.

Note: variance explanations are based on the final six months of cost performance reporting for this contract. The last cost performance report was received in July 2013.

**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
3949.6	N/A	32	4772.8	N/A	32	5027.4	0.0

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications that drove the approximately \$823M Target Price changes include: Production Non-Recurring and Tech Assist definitization in April 2013 (\$464M increase to Target Price) and Annualized Sustainment definitization in September 2013 (\$409M increase to Target Price); Target Price increases were offset by a fee decrement of \$50M in January 2013 for government-funded concurrency.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-130.5	-185.9
Previous Cumulative Variances	-62.1	-339.1
Net Change	-68.4	+153.2

**Cost and Schedule Variance Explanations**

The unfavorable net change in the cost variance is due to primarily driven by Out-of-Station effort and labor performance inefficiencies within Final Assembly including Seam Validation failures/non-conformances, material non-conformances and material availability impacting production flow.

The favorable net change in the schedule variance is due to primarily driven by re-baselining both labor and material to the definitized target dates in February 2013.

**Contract Comments**

As a whole, the LRIP 5 Contract Line Item Numbers consist of multiple contract types including Fixed Price Incentive Fee as well as Cost Plus Incentive Fee and Cost Plus Fixed-Fee. For this reason, the overall contract type is mixed and there is not a true contract ceiling.

The Program Manager's Estimate is TBD.

**Appropriation: Procurement**

Contract Name **JSF Propulsion F135 LRIP 5**  
 Contractor Pratt & Whitney  
 Contractor Location Hartford, CT 06118  
 Contract Number, Type N00019-10-C-0005, CPIF/FPIF  
 Award Date December 28, 2011  
 Definitization Date April 24, 2013

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1122.3	1122.3	36	1016.4	1026.4	36	1008.5	1016.4

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract definitization in April 2013 which lowered the ceiling price from the previous Undefined Contract Action price.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-26.7	-19.4
Previous Cumulative Variances	--	--
Net Change	-26.7	-19.4

**Cost and Schedule Variance Explanations**

The unfavorable cumulative cost variance is due to raw material and manufacturing cost increases for the Fan and High Pressure Compressor Integrally Bladed Rotors, Nozzle D-Flaps war on cost savings not realized, Externals Fuelraulic Systems cost savings initiatives were not achieved and engine assembly and tooling costs exceeded the plan.

The unfavorable cumulative schedule variance is due to schedule recovery from previously late to baseline plan for hardware, spare parts, spare modules, support equipment and tooling.

**Contract Comments**

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract is more than 90% complete, but the contractor declared an Over Target Schedule (OTS) in November 2013 for spare parts, support equipment and tooling that will not be completed within the period of performance. The Government program office is reviewing the request and working the final details with extending the contract. If the OTS is accepted by the Government, the 90% complete will change.

The previous cumulative variance is not populated since this is the first time the F135 LRIP 5 is being reported. This caused an incorrect cost and schedule variance and an incorrect net cost and schedule variance. Correct values are stated below:

Cost Variance -26.7  
 Schedule Variance -19.5  
 Net Cost Variance -29.7  
 Net Schedule Variance +132.5

## Deliveries and Expenditures

### F-35 Aircraft

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	14	14	14	100.00%
Production	82	71	2443	2.91%
Total Program Quantity Delivered	96	85	2457	3.46%

#### Expended and Appropriated (TY \$M)

Total Acquisition Cost	329964.1	Years Appropriated	21
Expended to Date	55985.7	Percent Years Appropriated	46.67%
Percent Expended	16.97%	Appropriated to Date	73383.2
Total Funding Years	45	Percent Appropriated	22.24%

The above data is current as of 3/10/2014.

Planned deliveries in 2013 were primarily delayed due to specialty metals, propulsion system issues, and runway shut down due to Joint Reserve Base Fort Worth, Texas, runway re-surfacing

Totals reflect United States aircraft only-no International Partner aircraft

### F-35 Engine

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	14	14	14	100.00%
Production	82	71	2443	2.91%
Total Program Quantity Delivered	96	85	2457	3.46%

#### Expended and Appropriated (TY \$M)

Total Acquisition Cost	68620.5	Years Appropriated	21
Expended to Date	14896.4	Percent Years Appropriated	46.67%
Percent Expended	21.71%	Appropriated to Date	17502.7
Total Funding Years	45	Percent Appropriated	25.51%

The above data is current as of 3/10/2014.

## 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 O&S cost estimate for the December 2013 SAR.

##### 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 (R&M) of the weapon system to drive down O&S costs

##### Antecedent Information:

The F-35 family of aircraft variants will replace the following current aircraft: F-16C/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.

Unitized O&S Costs BY2012 \$K		
Cost Element	F-35 Aircraft Cost per Flying Hour (\$)	F-16C/D (Antecedent) Cost per Flying Hour (\$)
Unit-Level Manpower	8.792	10.042
Unit Operations	7.275	5.632
Maintenance	10.019	5.501
Sustaining Support	3.132	2.075
Continuing System Improvements	3.336	2.291
Indirect Support	0.000	0.000
Other	0.000	0.000
<b>Total</b>	<b>32.554</b>	<b>25.541</b>

Unitized Cost Comments:

Comparing the costs of the 5th Generation F-35 to legacy aircraft is challenging. The cost table above compares an adjusted F-16C/D Cost per Flying Hour (CPFH) to a forecast of the CPFH for the F-35A variant. The F-35A CPFH figure is based on the Conventional Takeoff and Landing (CTOL) variant only. The F-35A CTOL variant will make up the majority of the DoD F-35 aircraft procurement, accounting for 1,763 of 2,443 total aircraft currently planned for United States (U.S.) forces.

The F-16C/D CPFH figures were developed in a joint effort between CAPE and the Air Force Cost Analysis Agency. The figures have been normalized for comparison to the F-35A CPFH forecast. The starting point for the F-16C/D CPFH is an average of actual cost incurred for this fleet during FY 2008 through FY 2010. In order to enable the direct comparison of the CPFH figures, the actual F-16C/D CPFH is adjusted to reflect the cost of fuel, the number of flight hours forecast for the F-35A, and FY 2013 inflation indices. The F-16C/D figures 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 figure, but equivalent costs for the F-16C/D are not available, and no adjustment was made for this element of cost. Finally, the F-16C/D figures assume full funding of requirements consistent with the F-35A CPFH figures.

Although the unitized costs for the entire F-35 program decreased slightly when compared to figures from the 2012 Milestone (MS) B estimate, the F-35A CTOL unitized cost figure shown in the Table above increased slightly relative to the comparable MS B figure. There are three considerations that result in a slight increase for the F-35A unitized cost shown above: 1) discrete modelling for Air Force squadrons by geographic location and active or reserve components; 2) no change in the fuel burn rate for the F-35A variant; and 3) updated Depot-Level Repairable (DLR) reliabilities and costs as discussed in detail in the following section on Total O&S Costs.

Given the significant increase in military capabilities provided, it is reasonable to expect F-35A to cost more to operate and sustain than 4<sup>th</sup> generation 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	597773.6	N/A
<b>Then Year</b>	1113272.6	N/A	1016516.0	N/A

Total O&S Costs Comments:

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The Total O&S Cost figures above reflect the CAPE independent life-cycle estimate of O&S costs, updated in 2013 in accordance with tasking from the annual Defense Acquisition Board (DAB) review of the F-35 program. The O&S cost estimate includes all three U.S. aircraft variants, is based on a forecast 30-year service-life, and is based on planned usage rates provided by the relevant military service. The planned F-35 usage rates, in terms of aircraft flight hours per year, are as follows: F-35A CTOL @ 250 hrs./yr.; F-35B Short Takeoff and Vertical Landing @ 302 hrs./yr.; and F-35C Carrier Variant @ 316 hrs./yr. The total life-cycle cost estimate is not a simple extrapolation of the F-35A flying hour cost shown in the unitized O&S cost table above. Total O&S costs are updated using FY 2013 inflation indices, and include updated forecasts of labor escalation rates for military, civilian, and contractor personnel. A comparable total cost figure for the antecedent system (i.e., F-16C/D) is not available.

The 2013 CAPE estimate of F-35 total life cycle O&S costs incorporates updated information regarding several key cost elements relative to the CAPE O&S cost estimate prepared for the MS B review in early 2012. This includes updated fuel burn rates for the F-35B and F-35C variants, use of historical escalation rates for government personnel, discrete modeling for Air Force squadrons by geographic location and active or reserve components, and updated DLR costs. The updated information results in increased cost forecasts for certain cost elements, and decreased cost forecasts for other elements. The 2013 CAPE total O&S estimate is approximately three percent lower (in BY 2012 dollars) and nine percent lower (in TY dollars) than the total O&S cost estimate prepared for the 2012 MS B re-approval DAB review.

For the first time, in 2013, the CAPE O&S cost estimate incorporates actual information on component reliabilities obtained from the ongoing F-35 flight operations, including flight test and field operations. This program information is provided from the DoD test community, through the Director, Operational Test and Evaluation, and includes actual reliability information on many F-35 components based on data collected during approximately 8,500 hours of flight operations. The data include the F-35A and F-35B variants, and flight operations through October 2013.

The reliability information has been compared to expected reliabilities for this stage of the program, for the A and B variants, based on reliability growth curves. The 2013 CAPE O&S estimate includes an increase of \$15 billion (BY12 \$) in DLR costs, relative to the 2012 Milestone B estimate, because component reliability information obtained from actual flight operations data is not consistent with expectations.

CAPE will continue to work with the DoD operational test community to improve the processes and methods used to incorporate actual data and information on component reliabilities and removal rates, obtained from ongoing flight operations, into the CAPE life-cycle O&S cost estimate for the F-35 program. This information will be used, together with reliability improvement forecasts, to update the life cycle O&S cost estimates as the program proceeds to and beyond IOC.

The December 2012 SAR identified a few disciplined initiatives designed to reduce sustainment cost. Among those were a sustainment Business Case Analysis (BCA) to identify cost reduction areas, an Industry day to foster competition in selected areas of the program, R&M improvements to optimize maintenance approach and a Targeted Affordability Program with emphasis on total ownership cost. Phase II of the BCA is complete and consisted of Autonomic Logistics Information System (ALIS), technical refresh, software and hardware maintenance, Depot planning, site activation and component repair as well as Support Equipment management repair and training systems. Working in parallel with the prime contractor to reduce cost via competition, the prime has executed a competition for Support Equipment which has resulted in approximately seven percent reduction in Support Equipment procurement costs. Since last year, the F-35 program office has assembled a readiness cell to identify problem areas through use of metrics and analytical data for solutions to reach availability goals of 60 percent or greater across all variants. In combination, program office implemented a fully funded R&M improvement program which includes diagnostics and analysis of select initiatives as candidate improvements. These candidates are identified from readiness cell inputs that have the highest impact or potential for redesign to maximize air system availability. The Program Executive Officer has approved implementation of the top 20



engineering retrofit candidates by year end. The goal is to have 20 candidates implemented in 50 percent of the LRIP 2, 3 and 4 aircraft. The Targeted Affordability Program synchronizes these efforts enterprise wide with the standup of the Cost War Room (CWR) in September 2013. The CWR is led by the program office in conjunction with Lockheed Martin and Pratt & Whitney, and is working on integrating both International Partner and U.S. Services. The CWR is specifically designed to be enterprise driven by defined sustainment cost reduction targets. At present, the CWR has generated approximately \$17 billion (B) of cost saving initiatives in analysis and approximately \$24B in the implementation and execution phase. The net effect of current initiatives will be incorporated in the Program's 2014 Annual Cost Estimate.

The F-35 program office estimate of \$916.8B TY\$ (\$541.1B BY 2012 dollars) differs from the CAPE estimate in primarily four areas: reliability, depot overhaul, government/contractor manpower and F-35A fuel consumption. In each of these cases, the F-35 program office elected to use the latest technical data provided by F-35 personnel working in conjunction with the Services. The CAPE used a different data source for reliability as described above. In the case of depot overhaul, government/contractor personnel, and F-35A fuel consumption the CAPE used different technical assumptions than the program office. Incorporating the same technical baseline for these four areas results in less than two percent difference between the CAPE and F-35 program estimates, as opposed to the current ten percent difference.

<b>O&amp;S Cost Variance</b>		
<b>Category</b>	<b>Base Year 2012 \$M</b>	<b>Change Explanation</b>
Prior SAR Total O&S Estimate - December 2012	617,014.431	
Cost Estimating Methodology	+18,082.128	Discrete modeling of U.S. Air Force AC/RC mix & application of historical cost escalation
Cost Data Update	-54,552.986	Spare Parts Unit Database updated & application of historical cost escalation
Labor Rate	-10,614.199	Revised labor rates
Energy Rate	0.000	
Technical Input	-6,652.916	Increased fuel efficiency
Programmatic/Planning Factors	+11,517.132	Updated indirect cost factors and inflation guidance
Other	+22,979.962	Reliability risk for depot-level repairs added
Total Changes	-19,240.879	
Current Estimate	597,773.552	

#### **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:

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:

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:

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	0.000		0.000
Unit Operations	0.000		0.000
Maintenance	0.000		0.000
Sustaining Support	0.000		0.000
Continuing System Improvements	0.000		0.000
Indirect Support	0.000		0.000
Other	0.000		0.000
Total	--		--

Unitized Cost Comments:

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>	N/A	N/A	N/A	N/A
<b>Then Year</b>	N/A	N/A	N/A	N/A

Total O&S Costs Comments:

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:**

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