Selected Acquisition Report (SAR)

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

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

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

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

DoD Component

DoD

Joint Participants

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

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

Responsible Office

Responsible Office

Lt Gen Christopher Bogdan
F-35 Lightning II Program Office
200 12th St South
Suite 600
Arlington, VA 22202-5402
christopher.bogdan@jsf.mil

Phone 703-601-5504
Fax 703-602-7649
DSN Phone 329-5504
DSN Fax --

Date Assigned December 6, 2012

References

F-35 Aircraft

SAR Baseline (Development Estimate)

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

Approved APB

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

F-35 Engine

SAR Baseline (Development Estimate)

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

Approved APB

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

Mission and Description

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

Executive Summary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Threshold Breaches

F-35 Aircraft

APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

F-35 Engine

APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☑
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

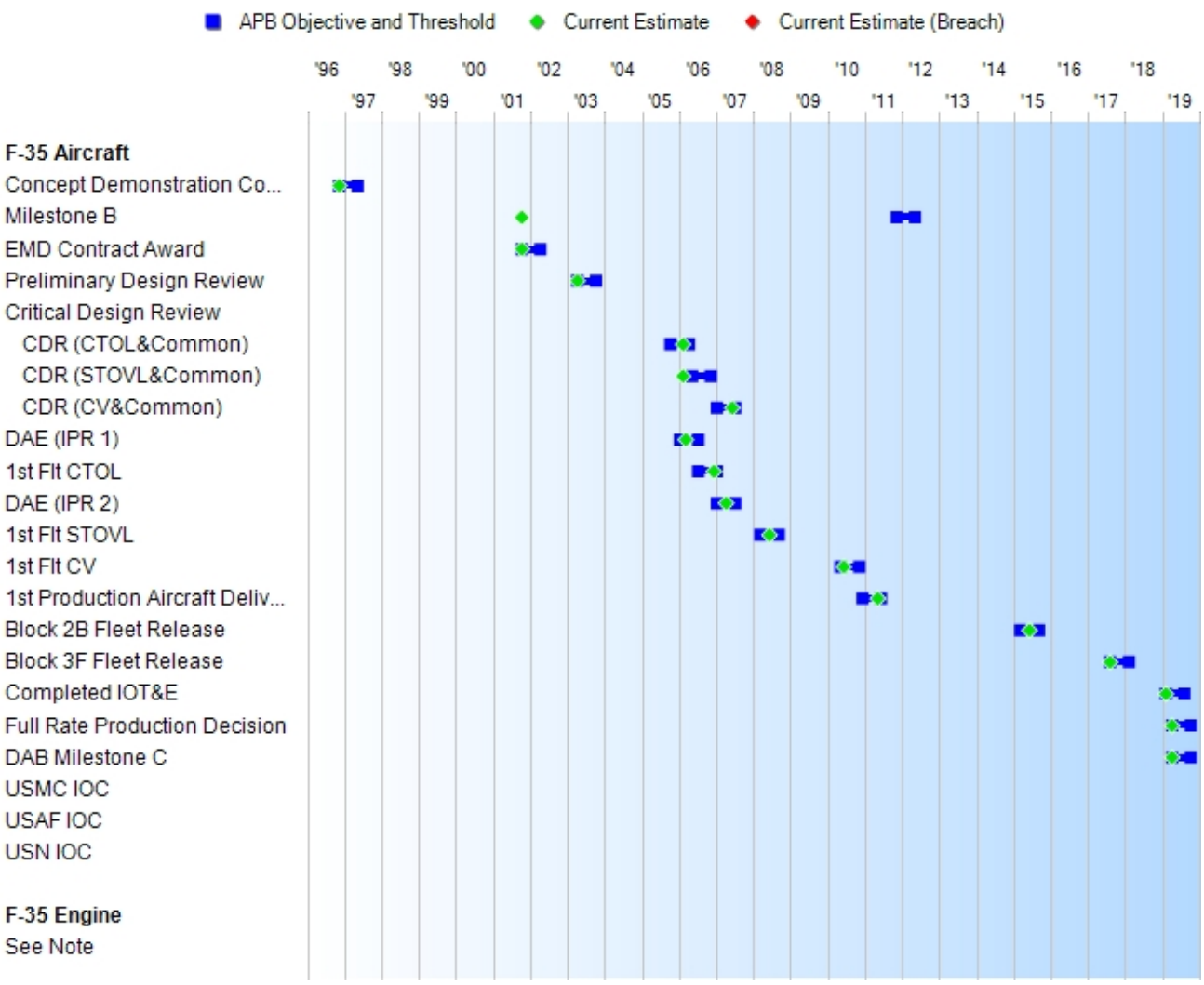
The RDT&E cost breach is the result of correcting an error made in the allocation of program funding to the two subprograms. The breach is not in any way due to cost growth in the F-35 Engine development program.

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

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

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

Schedule


APB Objective and Threshold
Current Estimate
Current Estimate (Breach)
'96
'97
'98
'99
'00
'01
'02
'03
'04
'05
'06
'07
'08
'09
'10
'11
'12
'13
'14
'15
'16
'17
'18
'19
F-35 Aircraft
Concept Demonstration Co...
Milestone B
EMD Contract Award
Preliminary Design Review
Critical Design Review
CDR (CTOL&Common)
CDR (STOVL&Common)
CDR (CV&Common)
DAE (IPR 1)
1st Flt CTOL
DAE (IPR 2)
1st Flt STOVL
1st Flt CV
1st Production Aircraft Deliv...
Block 2B Fleet Release
Block 3F Fleet Release
Completed IOT&E
Full Rate Production Decision
DAB Milestone C
USMC IOC
USAF IOC
USN IOC
F-35 Engine
See Note

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

Acronyms And Abbreviations

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

Change Explanations

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

Memo

1/ Original Milestone (MS) B rescinded in June 2010 due to Nunn-McCurdy breach. Reapproval of MS B was March 2012.

2/ Initial Operational Test and Evaluation completion is a Program Office estimate based on 2011 program structure, it will be revised as necessary to reflect approved Test and Evaluation Master Plan revision 4 data.

3/ Service Initial Operating Capability dates have not been established pending further service assessment.

4/ Full-Rate Production (FRP) Decision will replace the Defense Acquisition Board MS C. Also, the June 2010 Nunn-McCurdy Acquisition Decision Memorandum directs that FRP will be MS C for the F-35 program.

F-35 Engine

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

Change Explanations

None

Memo

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

Performance

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

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

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

Acronyms And Abbreviations

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

Change Explanations

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

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

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

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

F-35 Engine					
Characteristics	**SAR Baseline Dev Est**	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
See Note	N/A	N/A	N/A	TBD	N/A

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

Acronyms And Abbreviations

JROCM - Joint Requirements Oversight Council Memorandum

Change Explanations

None

Memo

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

Track To Budget

F-35 Aircraft

General Memo

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

RDT&E

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

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

Procurement				
APPN 1506	BA 01	PE 0204146N	(Navy)	
	ICN 0147	JSF (Navy)		
APPN 1506	BA 01	PE 0204146M	(Navy)	
	ICN 0152	JSF (Marine Corps)		
APPN 1506	BA 05	PE 0204146M	(Navy)	
	ICN 0592	F-35 STOVL Mods		
APPN 1506	BA 05	PE 0204146N	(Navy)	
	ICN 0593	F-35 CV Mods		
APPN 1506	BA 06	PE 0204146M	(Navy)	
	ICN 0605	Initial Spares (Marine Corps)	(Shared)	
APPN 1506	BA 06	PE 0204146N	(Navy)	
	ICN 0605	Initial Spares (Navy)	(Shared)	
APPN 3010	BA 06	PE 0207142F	(Air Force)	
	ICN 000999	Initial Spares (Air Force)	(Shared)	
APPN 3010	BA 01	PE 0207142F	(Air Force)	
	ICN ATA000	JSF (Air Force)		
APPN 3010	BA 05	PE 0207142F	(Air Force)	
	ICN F03500	Mods (Air Force)		(Sunk)
MILCON				
APPN 1205	BA 01	PE 0212576N	(Navy)	
		MILCON, USN		(Sunk)
APPN 1205	BA 01	PE 0216496M	(Navy)	

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

F-35 Engine

General Memo

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

RDT&E

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

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

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

Procurement

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

Cost and Funding

Cost Summary - Total Program

Total Acquisition Cost and Quantity - Total Program

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

Cost and Funding

Cost Summary - F-35 Aircraft

Total Acquisition Cost and Quantity - F-35 Aircraft

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

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

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

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

Cost Summary - F-35 Engine

Total Acquisition Cost and Quantity - F-35 Engine

Appropriation	BY2012 $M			BY2012 $M	TY $M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	11695.2	11695.2	12741.9	12940.6 [1]	10823.7	10823.7	11822.2
Procurement	42332.9	42332.9	46566.2	40551.1	53032.9	53032.9	52476.5
Flyaway	35329.6	--	--	33883.2	44400.4	--	44140.9
Recurring	32225.6	--	--	31310.6	40838.3	--	41013.3
Non Recurring	3104.0	--	--	2572.6	3562.1	--	3127.6
Support	7003.3	--	--	6667.9	8632.5	--	8335.6
Other Support	2068.9	--	--	1873.6	2407.0	--	2327.2
Initial Spares	4934.4	--	--	4794.3	6225.5	--	6008.4
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	54028.1	54028.1	N/A	53491.7	63856.6	63856.6	64298.7

[1] ***APB Breach***

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

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

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

Cost and Funding

Funding Summary - Total Program

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

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

Cost and Funding

Funding Summary - F-35 Aircraft

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

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

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

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

Funding Summary - F-35 Engine

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

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

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

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

Cost and Funding

Annual Funding By Appropriation - F-35 Aircraft

Annual Funding TY$ - F-35 Aircraft
0400 | RDT&E | Research, Development, Test, and Evaluation, Defense-Wide

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
1996	--	--	--	--	--	--	23.2
1997	--	--	--	--	--	--	54.8
1998	--	--	--	--	--	--	16.9
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**94.9**

Annual Funding BY$ - F-35 Aircraft
0400 | RDT&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
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**121.8**

Annual Funding TY$ - F-35 Aircraft
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	--	--	--	--	--	--	67.4
1996	--	--	--	--	--	--	65.4
1997	--	--	--	--	--	--	202.3
1998	--	--	--	--	--	--	357.2
1999	--	--	--	--	--	--	366.7
2000	--	--	--	--	--	--	200.3
2001	--	--	--	--	--	--	274.3
2002	--	--	--	--	--	--	304.1
2003	--	--	--	--	--	--	1212.0
2004	--	--	--	--	--	--	1636.3
2005	--	--	--	--	--	--	1528.7
2006	--	--	--	--	--	--	1685.1
2007	--	--	--	--	--	--	1640.8
2008	--	--	--	--	--	--	1369.8
2009	--	--	--	--	--	--	1206.3
2010	--	--	--	--	--	--	1570.3
2011	--	--	--	--	--	--	715.2
2012	--	--	--	--	--	--	1263.6
2013	--	--	--	--	--	--	1013.7
2014	--	--	--	--	--	--	582.5
2015	--	--	--	--	--	--	537.6
2016	--	--	--	--	--	--	434.4
2017	--	--	--	--	--	--	173.9
2018	--	--	--	--	--	--	78.0
Subtotal	**5**	**--**	**--**	**--**	**--**	**--**	**18485.9**

Annual Funding BY$ - F-35 Aircraft
3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

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

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

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

Annual Funding BY$ - F-35 Aircraft
1319 | RDT&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	--	--	--	--	--	--	104.3
1996	--	--	--	--	--	--	83.9
1997	--	--	--	--	--	--	250.9
1998	--	--	--	--	--	--	458.6
1999	--	--	--	--	--	--	476.5
2000	--	--	--	--	--	--	237.6
2001	--	--	--	--	--	--	335.4
2002	--	--	--	--	--	--	448.8
2003	--	--	--	--	--	--	1300.4
2004	--	--	--	--	--	--	1796.9
2005	--	--	--	--	--	--	1707.8
2006	--	--	--	--	--	--	1819.0
2007	--	--	--	--	--	--	1573.9
2008	--	--	--	--	--	--	1350.8
2009	--	--	--	--	--	--	1319.6
2010	--	--	--	--	--	--	1472.7
2011	--	--	--	--	--	--	999.6
2012	--	--	--	--	--	--	1036.3
2013	--	--	--	--	--	--	1247.5
2014	--	--	--	--	--	--	742.9
2015	--	--	--	--	--	--	962.5
2016	--	--	--	--	--	--	759.0
2017	--	--	--	--	--	--	440.6
2018	--	--	--	--	--	--	103.4
Subtotal	**9**	**--**	**--**	**--**	**--**	**--**	**21060.8**

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

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	--	--	--	--	--	--	11.3
1997	--	--	--	--	--	--	67.1
1998	--	--	--	--	--	--	72.1
1999	--	--	--	--	--	--	49.0
2000	--	--	--	--	--	--	27.7
2001	--	--	--	--	--	--	7.0
2002	--	--	--	--	--	--	263.1
2003	--	--	--	--	--	--	310.5
2004	--	--	--	--	--	--	463.7
2005	--	--	--	--	--	--	755.3
2006	--	--	--	--	--	--	802.7
2007	--	--	--	--	--	--	656.2
2008	--	--	--	--	--	--	552.7
2009	--	--	--	--	--	--	257.3
2010	--	--	--	--	--	--	133.8
2011	--	--	--	--	--	--	185.9
2012	--	--	--	--	--	--	145.7
2013	--	--	--	--	--	--	149.3
2014	--	--	--	--	--	--	4.4
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**4914.8**

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

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	--	--	--	--	--	--	14.7
1997	--	--	--	--	--	--	86.1
1998	--	--	--	--	--	--	91.7
1999	--	--	--	--	--	--	61.6
2000	--	--	--	--	--	--	34.3
2001	--	--	--	--	--	--	8.6
2002	--	--	--	--	--	--	318.5
2003	--	--	--	--	--	--	370.4
2004	--	--	--	--	--	--	538.2
2005	--	--	--	--	--	--	854.1
2006	--	--	--	--	--	--	880.3
2007	--	--	--	--	--	--	702.4
2008	--	--	--	--	--	--	581.0
2009	--	--	--	--	--	--	267.0
2010	--	--	--	--	--	--	136.8
2011	--	--	--	--	--	--	185.2
2012	--	--	--	--	--	--	142.4
2013	--	--	--	--	--	--	143.1
2014	--	--	--	--	--	--	4.1
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**5420.5**

Annual Funding TY$ - F-35 Aircraft
3010 | Procurement | Aircraft Procurement, 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
2006	--	107.2	--	--	107.2	--	107.2
2007	2	428.5	--	80.5	509.0	91.1	600.1
2008	6	983.1	--	171.9	1155.0	131.5	1286.5
2009	7	1009.2	--	276.8	1286.0	175.8	1461.8
2010	10	1471.2	--	355.7	1826.9	277.7	2104.6
2011	22	2751.2	--	551.9	3303.1	679.6	3982.7
2012	18	2041.5	--	369.3	2410.8	793.0	3203.8
2013	19	2052.4	--	588.2	2640.6	610.1	3250.7
2014	19	2081.6	--	727.1	2808.7	445.5	3254.2
2015	30	2984.1	--	757.6	3741.7	555.8	4297.5
2016	44	3847.0	--	811.2	4658.2	736.6	5394.8
2017	48	3991.3	--	847.8	4839.1	639.7	5478.8
2018	60	4479.3	--	767.2	5246.5	791.5	6038.0
2019	60	4331.9	--	489.9	4821.8	795.4	5617.2
2020	60	4455.7	--	447.4	4903.1	759.3	5662.4
2021	80	5751.3	--	568.2	6319.5	919.2	7238.7
2022	80	5806.8	--	573.5	6380.3	836.7	7217.0
2023	80	5947.9	--	590.6	6538.5	945.8	7484.3
2024	80	6057.6	--	600.0	6657.6	889.6	7547.2
2025	80	6224.1	--	614.4	6838.5	846.7	7685.2
2026	80	6384.0	--	628.0	7012.0	890.3	7902.3
2027	80	6495.2	--	653.9	7149.1	905.1	8054.2
2028	80	6613.4	--	650.2	7263.6	736.0	7999.6
2029	80	6736.0	--	631.2	7367.2	893.3	8260.5
2030	80	6870.3	--	638.5	7508.8	893.4	8402.2
2031	80	7063.4	--	662.1	7725.5	980.7	8706.2
2032	80	7224.6	--	677.2	7901.8	712.4	8614.2
2033	80	7504.3	--	700.8	8205.1	608.6	8813.7
2034	80	7664.7	--	712.0	8376.7	432.7	8809.4
2035	80	7828.8	--	723.6	8552.4	434.0	8986.4

2036	80	7989.7	--	737.9	8727.6	373.1	9100.7
2037	78	7290.6	--	742.7	8033.3	382.6	8415.9
Subtotal	**1763**	**152467.9**	**--**	**18347.3**	**170815.2**	**20162.8**	**190978.0**

Annual Funding BY$ - F-35 Aircraft
3010 | Procurement | Aircraft Procurement, 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
2006	--	115.9	--	--	115.9	--	115.9
2007	2	452.5	--	85.1	537.6	96.2	633.8
2008	6	1022.8	--	178.9	1201.7	136.8	1338.5
2009	7	1035.2	--	283.9	1319.1	180.3	1499.4
2010	10	1475.4	--	356.7	1832.1	278.5	2110.6
2011	22	2694.5	--	540.6	3235.1	665.5	3900.6
2012	18	1961.2	--	354.8	2316.0	761.8	3077.8
2013	19	1934.4	--	554.4	2488.8	575.0	3063.8
2014	19	1925.4	--	672.4	2597.8	412.1	3009.9
2015	30	2708.7	--	687.6	3396.3	504.5	3900.8
2016	44	3426.8	--	722.5	4149.3	656.2	4805.5
2017	48	3489.0	--	741.2	4230.2	559.2	4789.4
2018	60	3842.6	--	658.2	4500.8	679.0	5179.8
2019	60	3646.9	--	412.4	4059.3	669.6	4728.9
2020	60	3681.2	--	369.5	4050.7	627.4	4678.1
2021	80	4662.9	--	460.8	5123.7	745.2	5868.9
2022	80	4620.2	--	456.3	5076.5	665.7	5742.2
2023	80	4644.2	--	461.1	5105.3	738.5	5843.8
2024	80	4641.7	--	459.8	5101.5	681.6	5783.1
2025	80	4680.3	--	462.0	5142.3	636.7	5779.0
2026	80	4711.0	--	463.5	5174.5	657.0	5831.5
2027	80	4703.7	--	473.6	5177.3	655.4	5832.7
2028	80	4700.0	--	462.1	5162.1	523.1	5685.2
2029	80	4697.9	--	440.2	5138.1	623.0	5761.1
2030	80	4702.2	--	437.0	5139.2	611.5	5750.7
2031	80	4744.2	--	444.8	5189.0	658.7	5847.7
2032	80	4762.0	--	446.5	5208.5	469.5	5678.0
2033	80	4854.2	--	453.3	5307.5	393.7	5701.2
2034	80	4865.5	--	451.9	5317.4	274.7	5592.1
2035	80	4877.0	--	450.8	5327.8	270.3	5598.1

2036	80	4884.4	--	451.2	5335.6	228.0	5563.6
2037	78	4373.9	--	445.6	4819.5	229.5	5049.0
Subtotal	**1763**	**113537.8**	**--**	**14338.7**	**127876.5**	**15864.2**	**143740.7**

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

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

2034	80	4865.5
2035	80	4890.0
2036	80	4944.3
2037	78	4413.9
Subtotal	**1763**	**113537.8**

Annual Funding TY$ - F-35 Aircraft
1506 | Procurement | Aircraft Procurement, 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
2007	--	96.9	--	--	96.9	--	96.9
2008	6	923.2	--	38.6	961.8	10.7	972.5
2009	7	1062.0	--	181.9	1243.9	206.2	1450.1
2010	20	2681.2	--	304.4	2985.6	560.9	3546.5
2011	10	1494.8	--	251.6	1746.4	431.9	2178.3
2012	13	1477.7	--	333.1	1810.8	746.7	2557.5
2013	10	1159.6	--	347.1	1506.7	694.6	2201.3
2014	10	1242.5	--	530.4	1772.9	648.7	2421.6
2015	12	1391.8	--	732.0	2123.8	496.7	2620.5
2016	18	1918.4	--	731.2	2649.6	559.7	3209.3
2017	28	2742.4	--	687.3	3429.7	836.2	4265.9
2018	40	3346.5	--	690.3	4036.8	1033.9	5070.7
2019	40	3317.6	--	410.1	3727.7	749.2	4476.9
2020	40	3289.3	--	390.1	3679.4	1046.2	4725.6
2021	40	3286.5	--	400.5	3687.0	1169.9	4856.9
2022	40	3301.2	--	411.6	3712.8	908.9	4621.7
2023	40	3332.2	--	422.2	3754.4	910.9	4665.3
2024	40	3393.4	--	431.7	3825.1	755.7	4580.8
2025	40	3452.2	--	420.4	3872.6	781.4	4654.0
2026	40	3505.2	--	405.0	3910.2	659.0	4569.2
2027	40	3553.2	--	378.8	3932.0	404.0	4336.0
2028	40	3607.2	--	380.7	3987.9	370.3	4358.2
2029	40	3649.4	--	364.2	4013.6	381.5	4395.1
2030	40	3538.8	--	369.6	3908.4	305.1	4213.5
2031	21	1893.2	--	199.7	2092.9	217.0	2309.9
2032	5	492.2	--	74.4	566.6	53.1	619.7
Subtotal	**680**	**63148.6**	**--**	**9886.9**	**73035.5**	**14938.4**	**87973.9**

Annual Funding BY$ - F-35 Aircraft
1506 | Procurement | Aircraft Procurement, 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
2007	--	102.3	--	--	102.3	--	102.3
2008	6	960.5	--	40.2	1000.7	11.1	1011.8
2009	7	1089.3	--	186.6	1275.9	211.5	1487.4
2010	20	2688.9	--	305.3	2994.2	562.5	3556.7
2011	10	1464.0	--	246.4	1710.4	423.0	2133.4
2012	13	1419.6	--	320.0	1739.6	717.3	2456.9
2013	10	1092.9	--	327.1	1420.0	654.8	2074.8
2014	10	1149.2	--	490.6	1639.8	600.0	2239.8
2015	12	1263.3	--	664.4	1927.7	450.9	2378.6
2016	18	1708.9	--	651.2	2360.1	498.6	2858.7
2017	28	2397.3	--	600.8	2998.1	731.0	3729.1
2018	40	2870.8	--	592.2	3463.0	887.0	4350.0
2019	40	2793.0	--	345.2	3138.2	630.8	3769.0
2020	40	2717.5	--	322.3	3039.8	864.3	3904.1
2021	40	2664.6	--	324.7	2989.3	948.5	3937.8
2022	40	2626.6	--	327.5	2954.1	723.1	3677.2
2023	40	2601.8	--	329.7	2931.5	711.2	3642.7
2024	40	2600.2	--	330.8	2931.0	579.1	3510.1
2025	40	2595.9	--	316.1	2912.0	587.6	3499.6
2026	40	2586.6	--	298.9	2885.5	486.3	3371.8
2027	40	2573.2	--	274.3	2847.5	292.6	3140.1
2028	40	2563.6	--	270.6	2834.2	263.1	3097.3
2029	40	2545.2	--	254.1	2799.3	266.0	3065.3
2030	40	2422.0	--	253.0	2675.0	208.8	2883.8
2031	21	1271.6	--	134.2	1405.8	145.7	1551.5
2032	5	324.4	--	49.1	373.5	35.0	408.5
Subtotal	**680**	**51093.2**	**--**	**8255.3**	**59348.5**	**12489.8**	**71838.3**

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

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

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

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

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

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

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

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

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

2034	24.8
2035	4.4
Subtotal	**2340.9**

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

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

2034	15.6
2035	2.7
Subtotal	**1906.8**

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

Annual Funding By Appropriation - F-35 Engine

Annual Funding TY$ - F-35 Engine
3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

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

Annual Funding BY$ - F-35 Engine
3600 | RDT&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	--	--	--	--	--	--	494.3
2003	--	--	--	--	--	--	475.5
2004	--	--	--	--	--	--	445.2
2005	--	--	--	--	--	--	623.5
2006	--	--	--	--	--	--	635.6
2007	--	--	--	--	--	--	463.7
2008	--	--	--	--	--	--	615.2
2009	--	--	--	--	--	--	556.1
2010	--	--	--	--	--	--	473.6
2011	--	--	--	--	--	--	215.6
2012	--	--	--	--	--	--	100.2
2013	--	--	--	--	--	--	171.3
2014	--	--	--	--	--	--	188.0
2015	--	--	--	--	--	--	77.3
2016	--	--	--	--	--	--	46.8
2017	--	--	--	--	--	--	1.5
Subtotal	**5**	**--**	**--**	**--**	**--**	**--**	**6054.4**

Annual Funding TY$ - F-35 Engine
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

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

Annual Funding BY$ - F-35 Engine
1319 | RDT&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	--	--	--	--	--	--	455.7
2011	--	--	--	--	--	--	252.0
2012	--	--	--	--	--	--	184.8
2013	--	--	--	--	--	--	171.8
2014	--	--	--	--	--	--	188.6
2015	--	--	--	--	--	--	78.0
2016	--	--	--	--	--	--	47.5
2017	--	--	--	--	--	--	2.0
2018	--	--	--	--	--	--	0.7
Subtotal	**9**	**--**	**--**	**--**	**--**	**--**	**6517.7**

Annual Funding TY$ - F-35 Engine
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	--	--	--	--	--	--	5.7
1997	--	--	--	--	--	--	13.4
1998	--	--	--	--	--	--	4.0
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**23.1**

Annual Funding BY$ - F-35 Engine
0400 | RDT&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	--	--	--	--	--	--	7.4
1997	--	--	--	--	--	--	17.2
1998	--	--	--	--	--	--	5.1
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**29.7**

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

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	--	--	--	--	--	--	2.7
1997	--	--	--	--	--	--	3.9
1998	--	--	--	--	--	--	5.1
1999	--	--	--	--	--	--	5.7
2000	--	--	--	--	--	--	1.8
2001	--	--	--	--	--	--	0.5
2002	--	--	--	--	--	--	43.3
2003	--	--	--	--	--	--	115.3
2004	--	--	--	--	--	--	54.1
2005	--	--	--	--	--	--	2.9
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	54.0
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**289.3**

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

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	--	--	--	--	--	--	3.5
1997	--	--	--	--	--	--	5.0
1998	--	--	--	--	--	--	6.5
1999	--	--	--	--	--	--	7.2
2000	--	--	--	--	--	--	2.2
2001	--	--	--	--	--	--	0.6
2002	--	--	--	--	--	--	52.4
2003	--	--	--	--	--	--	137.5
2004	--	--	--	--	--	--	62.8
2005	--	--	--	--	--	--	3.3
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	57.8
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**338.8**

Annual Funding TY$ - F-35 Engine
3010 | Procurement | Aircraft Procurement, 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
2006	--	9.8	--	--	9.8	--	9.8
2007	2	47.5	--	6.9	54.4	27.7	82.1
2008	6	123.6	--	35.0	158.6	30.9	189.5
2009	7	127.0	--	63.9	190.9	33.3	224.2
2010	10	176.7	--	72.6	249.3	59.1	308.4
2011	22	353.2	--	91.6	444.8	136.6	581.4
2012	18	275.3	--	66.0	341.3	123.0	464.3
2013	19	288.0	--	98.5	386.5	110.3	496.8
2014	19	282.1	--	31.2	313.3	118.5	431.8
2015	30	421.1	--	18.5	439.6	147.7	587.3
2016	44	569.5	--	32.9	602.4	195.8	798.2
2017	48	613.7	--	53.8	667.5	170.0	837.5
2018	60	743.2	--	46.6	789.8	210.4	1000.2
2019	60	729.0	--	31.4	760.4	211.4	971.8
2020	60	756.8	--	31.2	788.0	201.8	989.8
2021	80	982.4	--	41.1	1023.5	244.4	1267.9
2022	80	998.6	--	41.0	1039.6	227.4	1267.0
2023	80	1025.2	--	42.7	1067.9	251.4	1319.3
2024	80	1047.2	--	42.8	1090.0	236.5	1326.5
2025	80	1075.3	--	43.5	1118.8	225.0	1343.8
2026	80	1102.7	--	45.0	1147.7	236.6	1384.3
2027	80	1124.1	--	45.7	1169.8	240.6	1410.4
2028	80	1147.0	--	45.3	1192.3	195.6	1387.9
2029	80	1170.8	--	47.1	1217.9	237.4	1455.3
2030	80	1196.6	--	47.4	1244.0	237.5	1481.5
2031	80	1234.9	--	49.6	1284.5	260.7	1545.2
2032	80	1278.1	--	49.0	1327.1	189.4	1516.5
2033	80	1320.9	--	50.5	1371.4	161.8	1533.2
2034	80	1351.2	--	50.5	1401.7	115.0	1516.7
2035	80	1382.6	--	51.6	1434.2	115.4	1549.6

2036	80	1413.4	--	52.2	1465.6	99.3	1564.9
2037	78	1272.6	--	52.8	1325.4	101.8	1427.2
Subtotal	**1763**	**25640.1**	**--**	**1477.9**	**27118.0**	**5152.3**	**32270.3**

Annual Funding BY$ - F-35 Engine
3010 | Procurement | Aircraft Procurement, 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
2006	--	10.6	--	--	10.6	--	10.6
2007	2	50.2	--	7.3	57.5	29.2	86.7
2008	6	128.6	--	36.4	165.0	32.2	197.2
2009	7	130.3	--	65.5	195.8	34.2	230.0
2010	10	177.2	--	72.9	250.1	59.2	309.3
2011	22	345.9	--	89.7	435.6	133.8	569.4
2012	18	264.5	--	63.4	327.9	118.1	446.0
2013	19	271.4	--	92.9	364.3	103.9	468.2
2014	19	260.9	--	28.9	289.8	109.6	399.4
2015	30	382.2	--	16.8	399.0	134.1	533.1
2016	44	507.3	--	29.3	536.6	174.4	711.0
2017	48	536.5	--	47.0	583.5	148.6	732.1
2018	60	637.6	--	40.0	677.6	180.4	858.0
2019	60	613.7	--	26.4	640.1	178.0	818.1
2020	60	625.2	--	25.8	651.0	166.7	817.7
2021	80	796.5	--	33.3	829.8	198.2	1028.0
2022	80	794.5	--	32.6	827.1	181.0	1008.1
2023	80	800.5	--	33.3	833.8	196.3	1030.1
2024	80	802.4	--	32.8	835.2	181.2	1016.4
2025	80	808.6	--	32.7	841.3	169.2	1010.5
2026	80	813.7	--	33.2	846.9	174.6	1021.5
2027	80	814.1	--	33.1	847.2	174.2	1021.4
2028	80	815.2	--	32.2	847.4	139.0	986.4
2029	80	816.6	--	32.8	849.4	165.6	1015.0
2030	80	819.0	--	32.4	851.4	162.6	1014.0
2031	80	829.4	--	33.3	862.7	175.2	1037.9
2032	80	842.4	--	32.3	874.7	124.9	999.6
2033	80	854.4	--	32.7	887.1	104.7	991.8
2034	80	857.7	--	32.1	889.8	73.0	962.8
2035	80	861.3	--	32.1	893.4	71.9	965.3

2036	80	864.1	--	31.9	896.0	60.7	956.7
2037	78	763.5	--	31.7	795.2	61.0	856.2
Subtotal	**1763**	**18896.0**	**--**	**1196.8**	**20092.8**	**4015.7**	**24108.5**

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

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

2034	80	857.7
2035	80	861.3
2036	80	869.1
2037	78	769.1
Subtotal	**1763**	**18896.0**

Annual Funding TY$ - F-35 Engine
1506 | Procurement | Aircraft Procurement, 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
2007	--	27.4	--	--	27.4	--	27.4
2008	6	246.1	--	1.3	247.4	1.2	248.6
2009	7	298.0	--	54.3	352.3	65.6	417.9
2010	20	599.0	--	118.5	717.5	127.6	845.1
2011	10	400.5	--	112.5	513.0	122.3	635.3
2012	13	191.4	--	57.7	249.1	61.9	311.0
2013	10	297.1	--	118.4	415.5	107.6	523.1
2014	10	277.2	--	21.6	298.8	142.4	441.2
2015	12	300.7	--	31.0	331.7	109.0	440.7
2016	18	432.5	--	27.1	459.6	122.9	582.5
2017	28	634.4	--	32.2	666.6	183.6	850.2
2018	40	816.7	--	34.1	850.8	226.9	1077.7
2019	40	825.7	--	100.0	925.7	164.5	1090.2
2020	40	824.1	--	90.0	914.1	229.6	1143.7
2021	40	823.6	--	80.0	903.6	256.8	1160.4
2022	40	831.5	--	85.0	916.5	199.5	1116.0
2023	40	845.7	--	85.0	930.7	199.9	1130.6
2024	40	866.2	--	105.0	971.2	165.9	1137.1
2025	40	882.2	--	95.0	977.2	171.6	1148.8
2026	40	896.6	--	95.0	991.6	144.6	1136.2
2027	40	908.6	--	65.0	973.6	88.7	1062.3
2028	40	923.0	--	60.0	983.0	81.2	1064.2
2029	40	939.3	--	62.0	1001.3	83.7	1085.0
2030	40	894.6	--	55.0	949.6	67.0	1016.6
2031	21	319.3	--	44.0	363.3	47.6	410.9
2032	5	71.8	--	20.0	91.8	11.7	103.5
Subtotal	**680**	**15373.2**	**--**	**1649.7**	**17022.9**	**3183.3**	**20206.2**

Annual Funding BY$ - F-35 Engine
1506 | Procurement | Aircraft Procurement, 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
2007	--	28.9	--	--	28.9	--	28.9
2008	6	256.0	--	1.4	257.4	1.2	258.6
2009	7	305.7	--	55.7	361.4	67.3	428.7
2010	20	600.7	--	118.9	719.6	127.9	847.5
2011	10	392.2	--	110.2	502.4	119.8	622.2
2012	13	183.9	--	55.5	239.4	59.4	298.8
2013	10	280.0	--	111.6	391.6	101.4	493.0
2014	10	256.4	--	20.0	276.4	131.7	408.1
2015	12	272.9	--	28.1	301.0	99.0	400.0
2016	18	385.3	--	24.1	409.4	109.5	518.9
2017	28	554.6	--	28.1	582.7	160.5	743.2
2018	40	700.6	--	29.3	729.9	194.6	924.5
2019	40	695.1	--	84.2	779.3	138.5	917.8
2020	40	680.8	--	74.4	755.2	189.7	944.9
2021	40	667.7	--	64.9	732.6	208.2	940.8
2022	40	661.6	--	67.6	729.2	158.7	887.9
2023	40	660.3	--	66.4	726.7	156.1	882.8
2024	40	663.7	--	80.5	744.2	127.1	871.3
2025	40	663.4	--	71.4	734.8	129.1	863.9
2026	40	661.6	--	70.2	731.8	106.7	838.5
2027	40	658.0	--	47.1	705.1	64.2	769.3
2028	40	656.0	--	42.6	698.6	57.7	756.3
2029	40	655.1	--	43.3	698.4	58.3	756.7
2030	40	612.3	--	37.6	649.9	45.9	695.8
2031	21	214.5	--	29.5	244.0	32.0	276.0
2032	5	47.3	--	13.2	60.5	7.7	68.2
Subtotal	**680**	**12414.6**	**--**	**1375.8**	**13790.4**	**2652.2**	**16442.6**

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

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

Low Rate Initial Production

F-35 Aircraft

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

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

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

F-35 Engine

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

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

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

Foreign Military Sales

F-35 Aircraft

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

F-35 Engine

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

Nuclear Cost

F-35 Aircraft
None

F-35 Engine
None

Unit Cost

F-35 Aircraft

Unit Cost Report

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

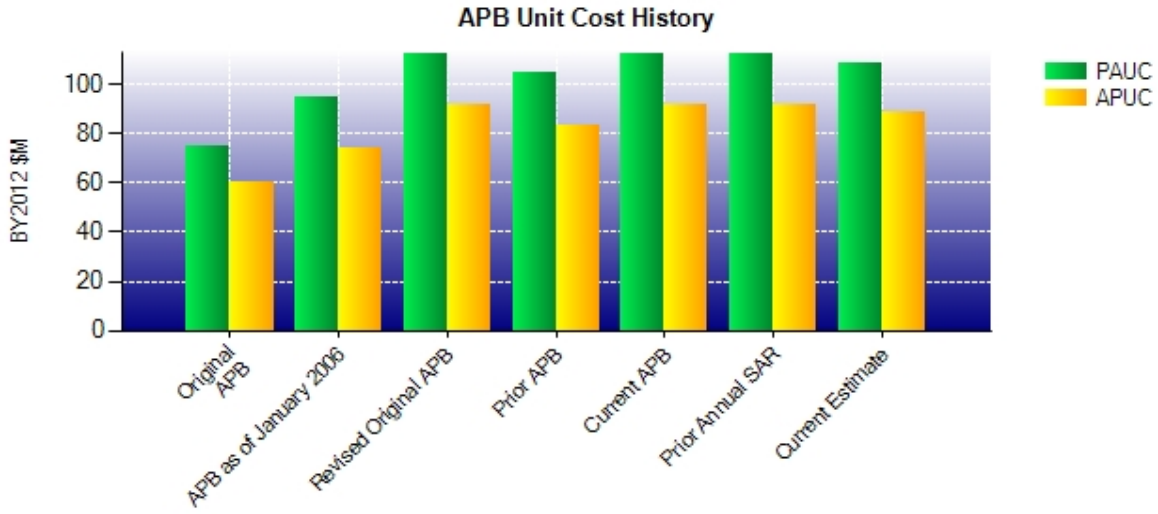
Unit Cost	BY2012 $M Revised Original UCR Baseline (MAR 2012 APB)	BY2012 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	276482.2	265934.3	
Quantity	2458	2457	
Unit Cost	112.483	108.235	-3.78
Average Procurement Unit Cost (APUC)			
Cost	224333.7	215579.0	
Quantity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

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

F-35A (Conventional Take Off and Landing) URF - $65.9 M (BY 2012)
F-35B (Short Takeoff and Vertical Landing) URF - $77.4M (BY 2012)
F-35C (Carrier Variant) URF - $77.9 M (BY 2012)

F-35 Aircraft

Unit Cost History



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

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)

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

Current SAR Baseline to Current Estimate (TY $M)

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

SAR Baseline History

Item/Event	SAR 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	OCT 2001
Milestone C	TBD	APR 2019	N/A	APR 2019
IOC	TBD	TBD	N/A	TBD
Total Cost (TY $M)	24800.0	331855.2	N/A	326912.8
Total Quantity	N/A	2457	N/A	2457
Prog. Acq. Unit Cost (PAUC)	N/A	135.065	N/A	133.054

The Services are currently reviewing their Initial Operational Capabilities (IOC) based on the restructured F-35 Program. The IOCs are determined by the Services based on both the program's performance and how the Services define IOC. Each Service has a somewhat different definition, depending on what capabilities they intend to have at IOC, their operational test (OT) and training requirements, and the number of aircraft they require for IOC. The Services have requested, with the support of the Department, waiting to establish an IOC date. The Services require more definition in the program schedule regarding IOC requirements, to include OT dates, before targeting a timeline. The program anticipates the Services will identify their IOC dates in 2013.

F-35 Engine

Unit Cost Report

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

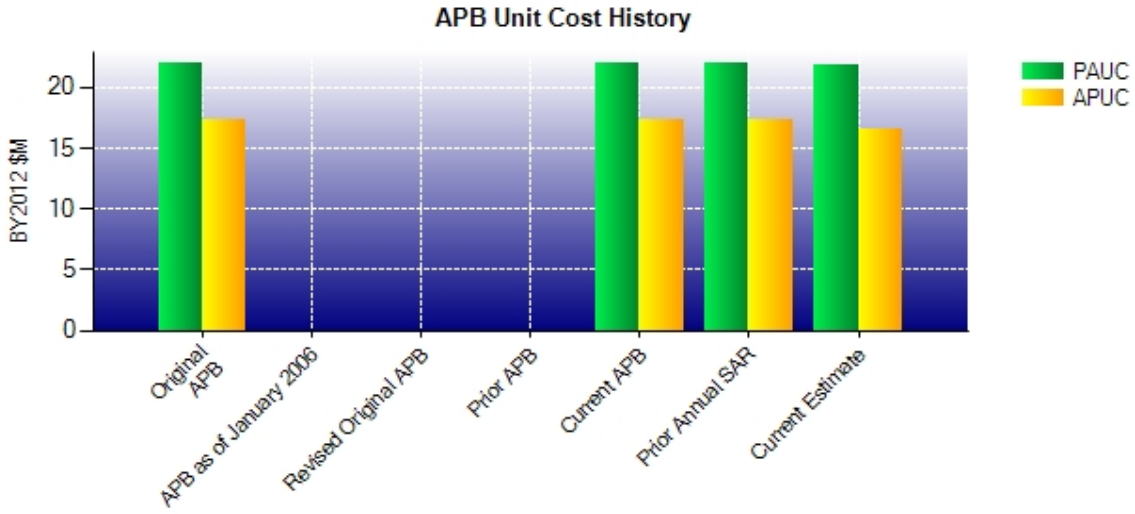
	BY2012 $M	BY2012 $M	
Unit Cost	**Original UCR Baseline (MAR 2012 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	53916.4	53491.7	
Quantity	2458	2457	
Unit Cost	21.935	21.771	-0.75
Average Procurement Unit Cost (APUC)			
Cost	42332.9	40551.1	
Quantity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

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

F-35A (Conventional Take Off and Landing) URF - $10.9 M (BY 2012)
F-35B (Short Takeoff and Vertical Landing) URF - $26.2 M (BY 2012)
F-35C (Carrier Variant) URF - $10.8 M (BY 2012)

F-35 Engine

Unit Cost History



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

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	0.530	0.000	0.110	0.000	-0.259	0.000	-0.201	0.180	26.170

Current SAR Baseline to Current Estimate (TY $M)

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

SAR Baseline History

Item/Event	SAR 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	64298.7
Total Quantity	N/A	2457	N/A	2457
Prog. Acq. Unit Cost (PAUC)	N/A	25.990	N/A	26.170

Cost Variance

F-35 Aircraft

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

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

Previous Estimate: December 2011

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

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

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

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

Cost Variance

F-35 Engine

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

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

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+42.4
Adjustment for current and prior escalation. (Estimating)	-24.7	-24.6
Realignment of cost between Air Vehicle and Engine (Air Force). (Estimating)	+959.2	+820.1
Realignment of cost between Air Vehicle and Engine (Navy). (Estimating)	+1101.6	+891.2
Realignment of cost between Air Vehicle and Engine (International). (Estimating)	-789.5	-730.3
Decrease due to International realignment of program funding (International). (Estimating)	-0.2	-0.2
Refined Estimate to Concept Development Phase (CDP). (Estimating)	-1.0	-0.1
RDT&E Subtotal	+1245.4	+998.5

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+1258.9
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate) fromFY 2015 and FY 2016 to FY 2037 (Air Force). (Schedule)	0.0	+40.6
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate and procurement completion extended three years from FY 2029 to FY 2032 (Navy). (Schedule)	0.0	+230.7
Adjustment for current and prior escalation. (Estimating)	-30.3	-31.5
Increase due to slower International procurement quantity profile (Air Force). (Estimating)	+38.3	+45.0
Increase due to slower International procurement quantity profile (Navy). (Estimating)	+53.9	+65.0
Increase due to incorporation of latest actual costs from Low Rate Initial Production (LRIP) lots (Air Force). (Estimating)	+21.6	+42.1
Decrease due to incorporation of latest actual costs from LRIP lots (Navy). (Estimating)	-797.1	-848.8
Revised estimate to reflect the application of new outyear escalation indices (Air Force). (Estimating)	-558.7	-628.7
Revised estimate to reflect the application of new outyear escalation indices (Navy). (Estimating)	-174.1	-236.5
Adjustment for current and prior escalation. (Support)	-8.2	-8.4
Decrease in Other Support due to maturation of technical baseline, definition of customer requirements. and further definition of Service beddown plans (Air Force). (Support)	-106.8	-58.9
Decrease in Other Support due to maturation of technical baseline, definition of customer requirements. and further definition of Service beddown plans (Navy). (Support)	-83.8	-63.0
Decrease in Initial Spares due to revised estimate of required risk funding (Air Force). (Support)	-56.4	-236.6
Decrease in Initial Spares due to revised estimate of required risk funding (Navy). (Support)	-80.2	-126.3
Procurement Subtotal	-1781.8	-556.4

Contracts

General Contract Memo

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

Appropriation: RDT&E

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

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

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

Cost And Schedule Variance Explanations

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

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

General Contract Variance Explanation

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

Contract Comments

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

Appropriation: RDT&E

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

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

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

Cost And Schedule Variance Explanations

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

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

Contract Comments

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

Appropriation: Procurement

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

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

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

Cost And Schedule Variance Explanations

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

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

Contract Comments

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

Appropriation: Procurement

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

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

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

Cost And Schedule Variance Explanations

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

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

Contract Comments

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

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

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

Appropriation: Procurement

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

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

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

Cost And Schedule Variance Explanations

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

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

Contract Comments

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

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

Appropriation: Procurement

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

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

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

Cost And Schedule Variance Explanations

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

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

Contract Comments

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

Deliveries and Expenditures

F-35 Aircraft

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

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	326912.8	Years Appropriated	20
Expenditures To Date	48661.8	Percent Years Appropriated	45.45%
Percent Expended	14.89%	Appropriated to Date	68494.9
Total Funding Years	44	Percent Appropriated	20.95%

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

Note - Planned deliveries in 2012 were primarily delayed due to IAM&AW workers strike.
Note - Totals reflect United States aircraft only-no International Partner aircraft.

F-35 Engine

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

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	64298.7	Years Appropriated	20
Expenditures To Date	12773.2	Percent Years Appropriated	45.45%
Percent Expended	19.87%	Appropriated to Date	16509.4
Total Funding Years	44	Percent Appropriated	25.68%

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

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

Operating and Support Cost

F-35 Aircraft

Assumptions and Ground Rules

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

Sustainment Strategy:
The F-35 weapon system sustainment strategy is based on the following tenets:
(1) the program office will serve as the Product Support Manager
(2) the long term Product Support Integrator is yet to be determined
(3) the program will inject competition in areas where feasible
(4) program will continually improve reliability and maintainability of the weapon system to drive down O&S costs

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

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	8.434	9.512
Unit Operations	7.830	5.608
Maintenance	8.729	5.469
Sustaining Support	3.508	2.039
Continuing System Improvements	3.422	2.271
Indirect Support	0.000	0.000
Other	0.000	0.000
Total	31.923	24.899

Unitized Cost Comments:

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

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

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

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

Total O&S Costs Comments:

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

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

Disposal Costs

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

F-35 Engine

Assumptions and Ground Rules

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

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

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

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

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

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

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

Disposal Costs

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