



Selected Acquisition Report (SAR)

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



F-35

As of December 31, 2011

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

F-35 Joint Strike Fighter

DoD Component

DoD

Joint Participants

United States Navy (USN); United States Air Force (USAF); Canada; The Netherlands; Italy; Turkey; Australia; United States Marine Corps (USMC); Defense Advanced Research Projects Agency (DARPA); United Kingdom; 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 Air Force.

Responsible Office

Responsible Office

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Date Assigned May 1, 2010

References

F-35 Aircraft

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 26, 2001

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 October 26, 2001

Approved APB

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

Mission and Description

The F-35 Joint Strike Fighter (JSF) Program will develop and field an affordable, highly common family of next-generation strike aircraft for the United States 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, primary 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, and replace the AV-8 currently employed by the Italian Navy. The CV will provide the Navy a multi-role, stealthy strike fighter aircraft to complement the F/A-18E/F and replace the Sea Harrier and GR 7 for the United Kingdom.

Executive Summary

This SAR complies with the statutory requirement to create subprograms (aircraft and engine) for the F-35 program; therefore program costs are no longer reflected in aggregate. Comparisons to previous aggregate SAR cost elements require the addition of both aircraft and engine subprogram cost elements. Additionally, the costs in this SAR are in Base Year (BY) 2012 dollars.

The F-35 remains the DoD's largest cooperative acquisition program, with eight International Partners participating with the US under Memorandums of Understanding for System Development and Demonstration (SDD) and Production, Sustainment and Follow-on Development. The F-35 Program has completed over 10 years of SDD and is currently executing Low Rate Initial Production (LRIP) 5.

In December 2011, the development program restructure was completed and is now being executed in accordance with the new performance measurement baseline. Key activities that supported the restructure include development of a new Integrated Master Schedule (IMS), execution of a Schedule Risk Assessment (SRA), and completion the Integrated Baseline Review (IBR). Under these efforts, the DoD revised flight test rates, established longer software development spans, increased emphasis on systems engineering discipline and processes and established new performance measures.

In January 2011, the Secretary of Defense (SECDEF) placed the F-35B Short Takeoff and Vertical Landing (STOVL) variant on probationary status due to significant, unique technical issues. F-35B testing was decoupled from the other two variants, allowing the program to increase focus on F-35B-specific development issues while testing on the other variants progressed. While all three variants demonstrated improved testing performance in 2011, the F-35B successfully completed more flights and test points than planned in addition to the first successful ship trials. Based on the results to date, the SECDEF determined the F-35B was demonstrating development, test, and production maturity comparable to and not substantially different from the other F-35 variants. As a result, the SECDEF made the decision on January 20, 2012 to remove the F-35B from probationary status.

The SDD flight test program has accumulated 2,698 total flight test hours through March 24, 2012. In CY 2011, the flight test program exceeded test point and flight targets for all variants. In CY 2011 aboard the USS WASP, the F-35B test program accomplished the first F-35 ship-board operations and the first F-35C ship suitability testing. This testing included Jet Blast Deflector, nominal and steam ingestion catapult tests, and compatibility tests with the Electromagnetic Aircraft Launch System. As of March 24, 2012, the F135 engine development program has completed 2,698 flight hours over 1,681 flights, with a total of 20,315 hours of engine testing encompassing all three variants of F-35 aircraft.

The Milestone B (MS B) Recertification Defense Acquisition Board (DAB) was conducted in two parts. The first part, held on January 17, 2012 reviewed the program's progress and issues in development, production, and sustainment. The second session, held on February 21, 2012, focused on 2366b certification and other regulatory/statutory requirements for the MS B DAB. The Acquisition Decision Memorandum (ADM), which will re-certify MS B will be signed in March 2012.

Software risk remains one of the top development issues for the program. Block 1B and 2A development/integration challenges are impacting capacity for delivery of Block 2B. The development program restructure built capacity for discovery in Blocks 2 and 3 development. In 2011, the results of independent software assessments highlighted known risk areas and endorsed on-going process improvements. As a result, the program is continuing to develop and refine processes to proactively make decisions on capability development and delivery, and mitigation strategies.

The program continues to make positive strides in the production program. The first Low Rate Initial Production (LRIP) lot has been completely delivered. As of March 22, 2012, nine production aircraft have been delivered to Eglin Air Force Base. 17 aircraft are on the Fort Worth, TX flight line preparing for delivery. There are also 17 aircraft in assembly build (three LRIP 3 and 14 LRIP 4 aircraft) and 49 aircraft in component assembly. The F135

propulsion contractor has delivered 25 production propulsion systems to-date.

On April 25, 2011, a notice of termination for convenience was issued by the F-35 Primary Contracting Officer to the General Electric/Rolls Royce Fighter Engine Team, Limited Liability Company on the F136 SDD contract.

Sustainment costs continue to be a significant area of focus. The Department is undertaking proactive management of the sustainment effort so that we have a clear understanding of life cycle Operations and Support (O&S) costs. The program is in the midst of a two-year "should cost" effort on the O&S cost. This effort will continue through 2012.

Over the next 12 months, the program will complete an F-35 Business Case Analysis (BCA) and the results from the BCA will assist the Program Executive Officer in refining the current F-35 support strategy. The BCA will also identify the best mix of existing Service/Partner Organic capabilities with that of the Industry team to develop the optimum long term best value F-35 support solution. The Services, working in concert with the program office, will continue to analyze options outside of the program office's purview to reduce operating costs; such as reviewing basing options and the sequencing of those actions, unit level manpower/squadron size and discrete sustainment requirements. In addition, the program has identified a number of Affordability Initiatives to help drive down sustainment costs.

The US Services have requested, with the support of the Department, to delay establishing Initial Operational Capability (IOC) dates. The US Services require more definition in the program schedule regarding IOC requirements, to include operational test dates, before targeting a timeline. They are pleased with the progress they have witnessed over the past year, but wish to observe additional results during 2012. The program anticipates the Services will identify their IOC dates in 2013.

On February 14, 2012, the Joint Requirements Oversight Council (JROC) met and made some important decisions regarding the F-35 Key Performance Parameters (KPPs). The impetus for these changes was guidance from the Vice Chairman of the Joint Chiefs of Staff, who chairs the JROC. The VCJCS asked programs to examine portfolios for KPPs that could potentially be modified based on observed performance or changes in concepts of operation with minimal or no impact on the warfighter that could substantially reduce the cost of a program. This effort is in keeping with the JROC's statutory requirement to consider cost, schedule and performance. Agreement was reached to modify the following: a) revise a Ground Rule and Assumption (GR&A) for the F-35A Combat Radius. The GR&As underpinning the KPP were updated to reflect the aircraft optimum airspeed and altitude, values that have been obtained through testing. Once these values were applied to the mission profile, the performance of the aircraft exceeded the original, unchanged KPP value, and b) approved a change to the F-35B Short Takeoff distance KPP from 550ft to 600ft. The STOVL variant (F-35B) 550ft short takeoff KPP was based on a four-ship simultaneous launch concept, formerly planned for use by the AV-8B. This concept is no longer in use. Planned F-35B operations (and the way AV-8B's currently operate) are for a maximum of two aircraft to depart from the ship, and increase the length of useable flight deck. This increased distance facilitated the addition of 50ft to the original, no-longer-relevant 550ft requirement, resulting in significant savings to the taxpayer. Attempting to achieve the original requirement would have required significant resources (e.g. more engine thrust or significant weight reductions), and would have resulted in excessive cost growth. The JROC Memorandum (040-12) that approved these changes was signed on March 16, 2012. Current estimates for all KPP are now within threshold requirements.

In December 2011, Japan selected the F-35 as their next generation fighter aircraft. Upon the signing of the Letter of Offer and Acceptance, Japan will become the second F-35 Foreign Military Sales (FMS) customer along with Israel.

Threshold Breaches

F-35 Aircraft

APB Breaches		
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Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches		
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Current UCR Baseline

PAUC	None
APUC	None

Original UCR Baseline

PAUC	None
APUC	None

F-35 Engine

APB Breaches		
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Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches		
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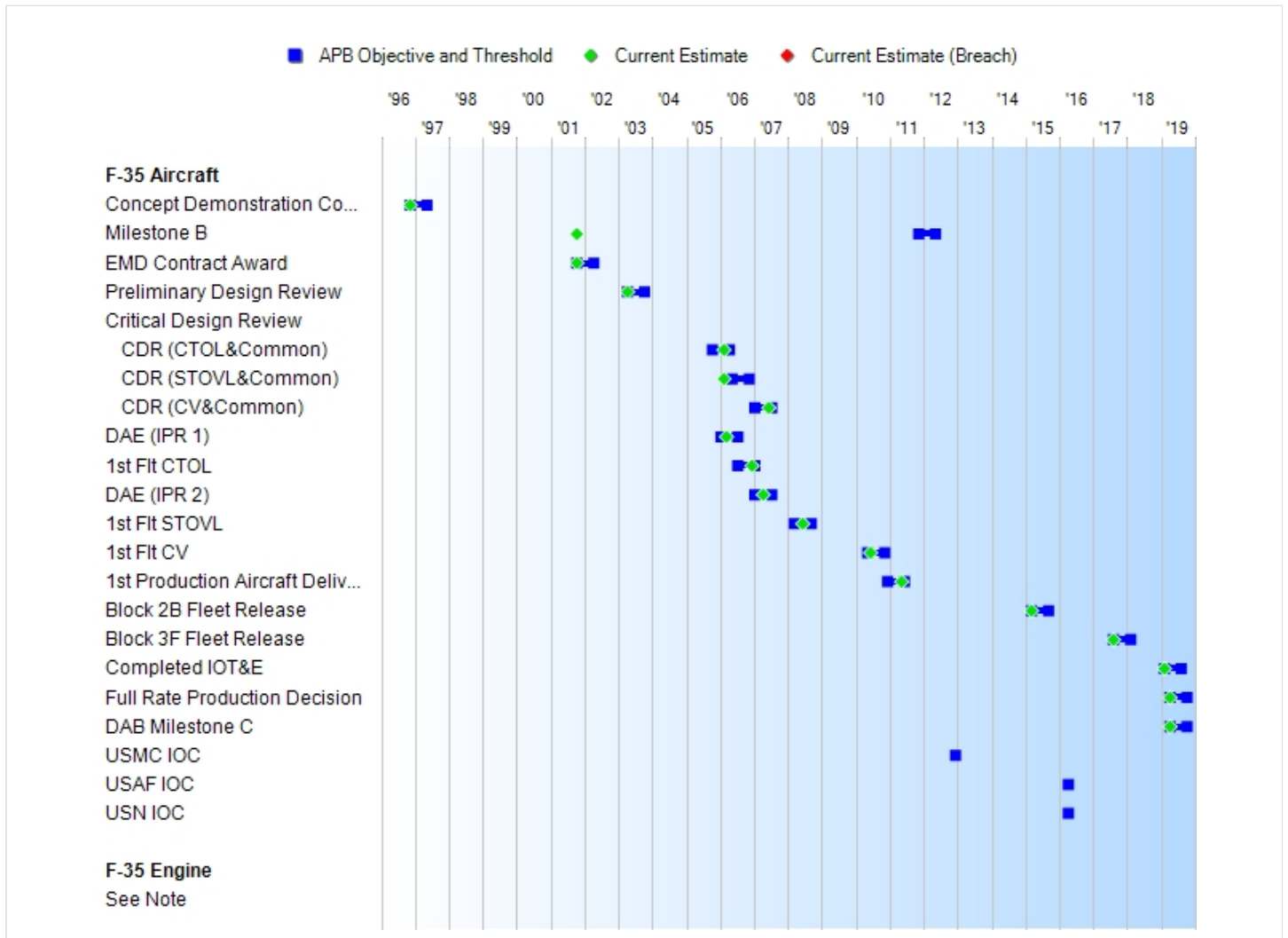
Current UCR Baseline

PAUC	None
APUC	None

Original UCR Baseline

PAUC	None
APUC	None

Schedule



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 2010	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	(Ch-1)
Block 2B Fleet Release	N/A	MAR 2015	SEP 2015	MAR 2015	(Ch-2)
Block 3F Fleet Release	N/A	AUG 2017	FEB 2018	AUG 2017	(Ch-2)
Completed IOT&E	APR 2016	FEB 2019	AUG 2019	FEB 2019	(Ch-3)
Full Rate Production Decision	N/A	APR 2019	OCT 2019	APR 2019	(Ch-2)
DAB Milestone C	APR 2016	APR 2019	OCT 2019	APR 2019	(Ch-4)
USMC IOC	DEC 2012	TBD	TBD	TBD	
USAF IOC	APR 2016	TBD	TBD	TBD	
USN IOC	APR 2016	TBD	TBD	TBD	

Acronyms And Abbreviations

APB - Acquisition Program Baseline
 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
 IOC - Initial Operational Capability
 IOT&E - Initial Operational Test and Evaluation
 IPR - Interim Progress Review
 STOVL - Short Takeoff and Vertical Landing
 USAF - United States Air Force
 USMC - United States Marine Corps
 USN - United States Navy

Change Explanations

(Ch-1) 1st Production Aircraft Delivered changed from October 2010 to May 2011 as a result of manufacturing

delays.

(Ch-2) Schedule event added to reflect March 2012 APB.

(Ch-3) Completed IOT&E changed from TBD to FEB 2019 incorporating changes in the program that are reflected in the March 2012 APB.

(Ch-4) DAB Milestone C changed from TBD to APR 2019 incorporating changes in the program that are reflected in the March 2012 APB.

Memo

1/ Original Milestone B rescinded in June 2010 due to Nunn-McCurdy breach. Milestone B Approval completed March 2012.

2/ IOT&E completion is Program Office estimate based on 2011 program structure, it will be revised as necessary to reflect approved Test and Evaluation Master Plan (TEMP) revision 4 data.

3/ Service IOC dates have not been established pending further service assessment.

4/ Full Rate Production Decision will replace the DAB Milestone C. Also, the June 2010 Nunn-McCurdy Acquisition Decision Memorandum (ADM) directs that Full Rate Production will be Milestone C for this 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

Schedule milestones for the F-35 Engine subprogram (F135 and F136) 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	Execute 550 ft STO with 4 JDAM (2 external & 2 internal), 2 AIM-120 (internal), fuel to fly 550nm	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	584
Combat Radius NM - STOVL Variant	550	550	450	TBD	469
Combat Radius NM -	730	730	600	TBD	615

CV Variant					
Internal Weapons Carriage - CTOL Variant	Sufficient bay volume to load, carry & employ objective Annex A weapons	N/A	N/A	TBD	Sufficient bay volume to load, carry & employ threshold Annex A weapons
Internal Weapons Carriage - STOVL Variant	Sufficient bay volume to load, carry & employ objective Annex A weapons	N/A	N/A	TBD	Sufficient bay volume to load, carry & employ threshold Annex A weapons
Internal Weapons Carriage - CV Variant	Sufficient bay volume to load, carry & employ objective Annex A weapons	N/A	N/A	TBD	Sufficient bay volume to load, carry & employ threshold Annex A weapons
Radio Frequency (RF) Signature	See Classified Extract	N/A	N/A	TBD	Classified
Logistic Footprint - CTOL Variant	Less than or equal to 6 C-17 equivalent loads	N/A	N/A	TBD	Less than or equal to 6.67 C-17 equivalent loads
Logistic Footprint - STOVL Variant	Less than or equal to 4 C-17 equivalent loads	N/A	N/A	TBD	Less than or equal to 5.22 C-17 equivalent loads
Logistic Footprint -CV Variant	Less than or equal to 34,000 cu ft, 183 Short Tons	N/A	N/A	TBD	Less than or equal to 29,407 cu ft, 164.4 Short Tons
Sortie Generation Rate - CTOL Variant	4/day initial surge; 3/day sustained surge; 2/day Wartime Sustained based on ASD of 2.5	N/A	N/A	TBD	3.55/day initial surge; 3.30/day sustained surge; 1/day Wartime Sustained based on

					ASD of 2.5
Sortie Generation Rate - CV Variant	4/day initial surge; 3/day sustained surge; 1/day Wartime Sustained based on ASD of 1.8	N/A	N/A	TBD	3.90/day initial surge; 2.88/day sustained surge; 1/day Wartime Sustained based on ASD of 1.8
Sortie Generation Rate - STOVL Variant	6/day initial surge; 4/day sustained surge; 2/day Wartime Sustained based on ASD of 1.1	N/A	N/A	TBD	6.10/day initial surge; 5.55/day sustained surge; 1/day Wartime sustained based on ASD of 1.1
Interoperability	100% of all top level IERs	N/A	N/A	TBD	Less than 100% of critical top level IERs
Mission Reliability	98% for all variants at ASD's listed in Table 13	N/A	N/A	TBD	98.4% for CV, 98.0% for STOVL & 97.1% for CTOL at ASD's listed in Table 13
CV Recovery Performance, Approach Speed	Max approach speed (Vpa) at RCLW of less than 140 kts	N/A	N/A	TBD	Max approach speed (Vpa) at RCLW of less than approximately 144.6 kts w/15 kts WOD at RCLW
Force Protection - All Variants	N/A	See Classified Annex in the ORD	See Classified Annex in the ORD	TBD	See Classified Annex in the ORD
Net Ready (NR) - All	N/A	100% of all	100% of	TBD	100% of

Variants		top-level OEIEs.	critical top-level OEIEs.		all top-level OEIEs.
Survivability - All Variants	N/A	See Classified Annex in the ORD	See Classified Annex in the ORD	TBD	See Classified Annex in the ORD
RF Signature (A component of the Survivability KPP) - All Variants	N/A	See Classified Annex in the ORD	See Classified Annex in the ORD	TBD	See Classified Annex in the ORD
Mission Reliability - CTOL Variant	N/A	98%	93%	TBD	98%
Mission Reliability - CV Variant	N/A	98%	95%	TBD	98%
Mission Reliability - STOVL Variant	N/A	98%	95%	TBD	98%
Logistics Footprint - CTOL Variant	N/A	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	N/A	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	N/A	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	N/A	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	N/A	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	N/A	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)	N/A	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)	N/A	Vpa. Maximum approach speed (Vpa) at required carrier landing weight (RCLW) of less than	Vpa. Maximum approach speed (Vpa) at required carrier landing weight (RCLW) of less than	TBD	Vpa. Maximum approach speed (Vpa) at required carrier landing weight (RCLW) of

		140 knots.	145 knots.		less than 140 knots.
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Requirements Source:

The Joint Strike Fighter Operational Requirements Document (ORD) Change 3, dated August 19, 2008.

Objective/Threshold change approved by Joint Requirements Oversight Council Memorandum (JROCM) 040-12 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
 IER - Information Exchange Requirement
 JDAM - Joint Direct Attack Munitions
 KTS - Knots
 NM - Nautical Miles
 RCLW - Required Carrier Landing Weight
 STO - Short Takeoff
 STOVL - Short Takeoff and Vertical Landing
 TBD - To be determined
 V_{pa} - Max Approach Speed
 WOD - Wind Over the Deck

Change Explanations

None

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:

The Joint Strike Fighter Operational Requirements Document (ORD) Change 3, dated August 19, 2008

Objective/Threshold change approved by Joint Requirements Oversight Council Memorandum (JROCM) 040-12 dated March 16, 2012.

Change Explanations

None

Track To Budget

F-35 Aircraft

General Memo

F-35 is DoD's largest cooperative development program. In addition to the above DoD funding lines, eight other 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)	
		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	(Shared)	
	Project 9999	RDT&E, Navy EMD/Congressional Adds		(Sunk)
APPN 3600	BA 04	PE 0603800F	(Air Force)	
		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)

MILCON

APPN 1205	BA 01	PE 0212576N	(Navy)
	Project N1000248	MILCON, USN	(Sunk)
APPN 1205	BA 01	PE 0216496N	(Navy)
	Project 601694	MILCON, USN	
APPN 1205	BA 01	PE 0816376N	(Navy)
	Project N0700091	MILCON, USN	(Sunk)
APPN 3300		PE 0207142F	(Air Force)
		MILCON, AF	

Track To Budget

F-35 Engine

General Memo

F-35 is DoD's largest cooperative development program. In addition to the above DoD funding lines, eight other 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)	
		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	(Shared)	
	Project 9999	RDT&E, Navy EMD/Congressional Adds		(Sunk)
APPN 3600	BA 04	PE 0603800F	(Air Force)	
		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

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	32300.0	59677.3	--	59677.3	34400.0	55233.8	55233.8
Procurement	143300.0	266665.8	--	266665.8	196600.0	335680.7	335680.7
Flyaway	121215.6	--	--	229571.3	166349.7	--	290938.0
Recurring	116073.3	--	--	203995.2	159390.4	--	260071.4
Non Recurring	5142.3	--	--	25576.1	6959.3	--	30866.6
Support	22084.4	--	--	37094.5	30250.3	--	44742.7
Other Support	15403.4	--	--	20686.4	21109.3	--	24068.0
Initial Spares	6681.0	--	--	16408.1	9141.0	--	20674.7
MILCON	1500.0	4168.0	--	4168.0	2000.0	4797.3	4797.3
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	177100.0	330511.1	N/A	330511.1	233000.0	395711.8	395711.8

Cost and Funding

Cost Summary - F-35 Aircraft

Total Acquisition Cost and Quantity - F-35 Aircraft

Appropriation	BY2012 \$M			BY2012 \$M	TY \$M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	32488.7	47982.1	52780.9	47982.1	28685.7	44410.1	44410.1
Procurement	144179.9	224332.9	246767.1	224332.9	163666.0	282647.8	282647.8
Flyaway	120956.6	--	--	194241.7	137304.4	--	246537.6
Recurring	115938.0	--	--	171769.6	131618.3	--	219233.1
Non Recurring	5018.6	--	--	22472.1	5686.1	--	27304.5
Support	23223.3	--	--	30091.2	26361.6	--	36110.2
Other Support	16178.3	--	--	18617.5	18368.8	--	21661.0
Initial Spares	7045.0	--	--	11473.7	7992.8	--	14449.2
MILCON	1810.1	4168.0	4582.5	4168.0	2000.0	4797.3	4797.3
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	178478.7	276483.0	N/A	276483.0	194351.7	331855.2	331855.2

The Base Year for the program has been updated from FY 2002 to FY 2012 using a deflator of 1.221082.

The development effort is 80% complete. The Service Cost Position for Research Development Test & Evaluation is within 1% of the CAPE's estimate. 25 F-35 aircraft have been delivered to date. These actuals were used to update the Service Cost Position for procurement which is within 2% of the CAPE's estimate.

This estimate, like all previous Cost Analysis Improvement Group (CAIG) and Cost Assessment 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 (MDAP) programs. 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.

The F-35 Aircraft MILCON and O&S data contains both aircraft and engine data and is not broken out.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E		14	14
Procurement		2852	2443
Total		2866	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	6488.0	11695.2	12741.9	11695.2	5714.3	10823.7	10823.7
Procurement	28741.5	42332.9	46566.2	42332.9	32934.0	53032.9	53032.9
Flyaway	25315.6	--	--	35329.6	29045.3	--	44400.4
Recurring	24129.7	--	--	32225.6	27772.1	--	40838.3
Non Recurring	1185.9	--	--	3104.0	1273.2	--	3562.1
Support	3425.9	--	--	7003.3	3888.7	--	8632.5
Other Support	2408.9	--	--	2068.9	2740.5	--	2407.0
Initial Spares	1017.0	--	--	4934.4	1148.2	--	6225.5
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	35229.5	54028.1	N/A	54028.1	38648.3	63856.6	63856.6

The Base Year for the program has been updated from FY 2002 to FY 2012 using a deflator of 1.221082.

The development effort is 80% complete. The Service Cost Position for Research Development Test & Evaluation is within 1% of the CAPE's estimate. 25 F-35 engines have been delivered to date. These actuals were used to update the Service Cost Position for procurement which is within 2% of the CAPE's estimate.

This estimate, like all previous Cost Analysis Improvement Group (CAIG) and Cost Assessment 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 (MDAP) programs. 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.

The F-35 Engine subprogram contains both F135 and F136 data.

The F-35 Engine subprogram sunk cost includes approximately \$2.8B of development cost for the F136 engine. The USD (AT&L) directed termination of the F136 System Development and Demonstration contract for convenience of the Government in an Acquisition Decision Memorandum dated April 25, 2011. Termination costs are to be determined and will be updated when the termination is finalized with the contractor.

The engine program includes the efforts to develop and procure a core engine for all three variants. It also includes the effort to develop and procure the STOVL lift fan nozzles (applies to STOVL aircraft only), and

other hardware (e.g. STOVL roll post) required for full engine functionality and integration into the aircraft. It does not include the efforts of the prime contractor to integrate engine hardware with the aircraft; this effort is captured in the F-35 Aircraft subprogram.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	14	14	14
Procurement	2852	2443	2443
Total	2866	2457	2457

Cost and Funding

Funding Summary - Total Program

Appropriation and Quantity Summary - Total Program
FY2013 President's Budget / December 2011 SAR (TY\$ M)

Appropriation	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
RDT&E	43824.3	2850.6	2809.1	2251.4	1625.4	1102.3	615.7	155.0	55233.8
Procurement	21499.5	6537.8	6471.7	6720.8	8276.1	10494.8	11791.8	263888.2	335680.7
MILCON	947.5	199.5	131.1	269.0	398.3	231.3	158.7	2461.9	4797.3
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2013 Total	66271.3	9587.9	9411.9	9241.2	10299.8	11828.4	12566.2	266505.1	395711.8
PB 2012 Total	65990.0	9743.2	10588.8	12093.2	13510.6	15523.2	16626.1	235317.7	379392.8
Delta	281.3	-155.3	-1176.9	-2852.0	-3210.8	-3694.8	-4059.9	31187.4	16319.0

Cost and Funding

Funding Summary - F-35 Aircraft

Appropriation and Quantity Summary - F-35 Aircraft FY2013 President's Budget / December 2011 SAR (TY\$ M)

Appropriation	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
RDT&E	35236.6	2291.9	2258.6	1810.2	1306.9	886.3	495.0	124.6	44410.1
Procurement	18181.9	5624.6	5455.0	5683.4	6982.0	8862.2	9965.5	221893.2	282647.8
MILCON	947.5	199.5	131.1	269.0	398.3	231.3	158.7	2461.9	4797.3
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2013 Total	54366.0	8116.0	7844.7	7762.6	8687.2	9979.8	10619.2	224479.7	331855.2
PB 2012 Total	65990.0	9743.2	10588.8	12093.2	13510.6	15523.2	16626.1	235317.7	379392.8
Delta	-11624.0	-1627.2	-2744.1	-4330.6	-4823.4	-5543.4	-6006.9	-10838.0	-47537.6

Quantity	Undistributed	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
Development	14	0	0	0	0	0	0	0	0	14
Production	0	90	31	29	29	44	66	76	2078	2443
PB 2013 Total	14	90	31	29	29	44	66	76	2078	2457
PB 2012 Total	14	90	32	42	62	81	108	130	1898	2457
Delta	0	0	-1	-13	-33	-37	-42	-54	180	0

Funding Summary - F-35 Engine

Appropriation and Quantity Summary - F-35 Engine FY2013 President's Budget / December 2011 SAR (TY\$ M)

Appropriation	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
RDT&E	8587.7	558.7	550.5	441.2	318.5	216.0	120.7	30.4	10823.7
Procurement	3317.6	913.2	1016.7	1037.4	1294.1	1632.6	1826.3	41995.0	53032.9
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 2013 Total	11905.3	1471.9	1567.2	1478.6	1612.6	1848.6	1947.0	42025.4	63856.6
PB 2012 Total	--	--	--	--	--	--	--	--	0.0
Delta	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63856.6

Quantity	Undistributed	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
Development	14	0	0	0	0	0	0	0	0	14
Production	0	90	31	29	29	44	66	76	2078	2443
PB 2013 Total	14	90	31	29	29	44	66	76	2078	2457
PB 2012 Total	0	0	0	0	0	0	0	0	0	0
Delta	14	90	31	29	29	44	66	76	2078	2457

Cost and Funding

Annual Funding By Appropriation - F-35 Aircraft

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	--	--	--	--	--	--	580.0
2003	--	--	--	--	--	--	1319.4
2004	--	--	--	--	--	--	1673.5
2005	--	--	--	--	--	--	1675.5
2006	--	--	--	--	--	--	1758.4
2007	--	--	--	--	--	--	1696.0
2008	--	--	--	--	--	--	1486.6
2009	--	--	--	--	--	--	1370.3
2010	--	--	--	--	--	--	1516.6
2011	--	--	--	--	--	--	1010.1
2012	--	--	--	--	--	--	1053.5
2013	--	--	--	--	--	--	1183.9
2014	--	--	--	--	--	--	1015.9
2015	--	--	--	--	--	--	822.3
2016	--	--	--	--	--	--	598.7
2017	--	--	--	--	--	--	369.9
2018	--	--	--	--	--	--	61.9
Subtotal	9	--	--	--	--	--	20760.7

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	--	--	--	--	--	--	104.4
1996	--	--	--	--	--	--	84.0
1997	--	--	--	--	--	--	251.2
1998	--	--	--	--	--	--	459.0
1999	--	--	--	--	--	--	477.0
2000	--	--	--	--	--	--	237.8
2001	--	--	--	--	--	--	335.7
2002	--	--	--	--	--	--	702.7
2003	--	--	--	--	--	--	1575.5
2004	--	--	--	--	--	--	1944.1
2005	--	--	--	--	--	--	1896.5
2006	--	--	--	--	--	--	1930.2
2007	--	--	--	--	--	--	1817.2
2008	--	--	--	--	--	--	1564.3
2009	--	--	--	--	--	--	1423.6
2010	--	--	--	--	--	--	1552.1
2011	--	--	--	--	--	--	1014.3
2012	--	--	--	--	--	--	1039.5
2013	--	--	--	--	--	--	1149.1
2014	--	--	--	--	--	--	969.3
2015	--	--	--	--	--	--	770.7
2016	--	--	--	--	--	--	551.2
2017	--	--	--	--	--	--	334.6
2018	--	--	--	--	--	--	55.0
Subtotal	9	--	--	--	--	--	22270.9

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

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	--	--	--	--	--	--	572.8
2003	--	--	--	--	--	--	1295.0
2004	--	--	--	--	--	--	1624.1
2005	--	--	--	--	--	--	1672.5
2006	--	--	--	--	--	--	1821.0
2007	--	--	--	--	--	--	1667.6
2008	--	--	--	--	--	--	1571.9
2009	--	--	--	--	--	--	1400.7
2010	--	--	--	--	--	--	1635.0
2011	--	--	--	--	--	--	749.1
2012	--	--	--	--	--	--	1115.9
2013	--	--	--	--	--	--	958.8
2014	--	--	--	--	--	--	792.0
2015	--	--	--	--	--	--	484.6
2016	--	--	--	--	--	--	287.6
2017	--	--	--	--	--	--	125.1
2018	--	--	--	--	--	--	62.7
Subtotal	5	--	--	--	--	--	19370.0

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	--	--	--	--	--	--	89.1
1996	--	--	--	--	--	--	85.0
1997	--	--	--	--	--	--	259.8
1998	--	--	--	--	--	--	454.9
1999	--	--	--	--	--	--	461.6
2000	--	--	--	--	--	--	248.5
2001	--	--	--	--	--	--	335.7
2002	--	--	--	--	--	--	694.0
2003	--	--	--	--	--	--	1546.4
2004	--	--	--	--	--	--	1886.7
2005	--	--	--	--	--	--	1893.1
2006	--	--	--	--	--	--	1998.9
2007	--	--	--	--	--	--	1786.8
2008	--	--	--	--	--	--	1654.0
2009	--	--	--	--	--	--	1455.1
2010	--	--	--	--	--	--	1673.2
2011	--	--	--	--	--	--	752.2
2012	--	--	--	--	--	--	1101.1
2013	--	--	--	--	--	--	930.7
2014	--	--	--	--	--	--	755.7
2015	--	--	--	--	--	--	454.2
2016	--	--	--	--	--	--	264.8
2017	--	--	--	--	--	--	113.1
2018	--	--	--	--	--	--	55.7
Subtotal	5	--	--	--	--	--	20950.3

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

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	--	--	--	--	--	--	70.3
1998	--	--	--	--	--	--	21.5
Subtotal	--	--	--	--	--	--	121.9

**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	--	--	--	--	--	--	57.1
1998	--	--	--	--	--	--	62.1
1999	--	--	--	--	--	--	44.0
2000	--	--	--	--	--	--	27.7
2001	--	--	--	--	--	--	2.0
2002	--	--	--	--	--	--	246.4
2003	--	--	--	--	--	--	342.4
2004	--	--	--	--	--	--	416.3
2005	--	--	--	--	--	--	609.6
2006	--	--	--	--	--	--	645.4
2007	--	--	--	--	--	--	571.1
2008	--	--	--	--	--	--	444.4
2009	--	--	--	--	--	--	206.9
2010	--	--	--	--	--	--	107.6
2011	--	--	--	--	--	--	149.5
2012	--	--	--	--	--	--	122.5
2013	--	--	--	--	--	--	115.9
2014	--	--	--	--	--	--	2.3
Subtotal	--	--	--	--	--	--	4184.5

**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	--	--	--	--	--	--	73.3
1998	--	--	--	--	--	--	79.1
1999	--	--	--	--	--	--	55.4
2000	--	--	--	--	--	--	34.4
2001	--	--	--	--	--	--	2.4
2002	--	--	--	--	--	--	298.5
2003	--	--	--	--	--	--	408.9
2004	--	--	--	--	--	--	483.6
2005	--	--	--	--	--	--	690.0
2006	--	--	--	--	--	--	708.5
2007	--	--	--	--	--	--	611.9
2008	--	--	--	--	--	--	467.6
2009	--	--	--	--	--	--	214.9
2010	--	--	--	--	--	--	110.1
2011	--	--	--	--	--	--	150.1
2012	--	--	--	--	--	--	120.9
2013	--	--	--	--	--	--	112.5
2014	--	--	--	--	--	--	2.2
Subtotal	--	--	--	--	--	--	4639.0

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	--	97.1	--	--	97.1	--	97.1
2008	6	925.4	--	38.7	964.1	10.7	974.8
2009	7	1067.1	--	182.8	1249.9	207.1	1457.0
2010	20	2737.8	--	310.8	3048.6	572.7	3621.3
2011	10	1707.9	--	287.5	1995.4	493.4	2488.8
2012	13	1398.7	--	315.3	1714.0	706.8	2420.8
2013	10	1161.2	--	347.6	1508.8	695.5	2204.3
2014	10	1161.1	--	391.2	1552.3	915.6	2467.9
2015	12	1260.7	--	629.6	1890.3	726.6	2616.9
2016	18	1738.6	--	689.7	2428.3	797.5	3225.8
2017	28	2409.8	--	788.2	3198.0	1184.8	4382.8
2018	50	4345.9	--	624.6	4970.5	927.7	5898.2
2019	50	4084.9	--	653.7	4738.6	899.9	5638.5
2020	50	4104.0	--	492.4	4596.4	1133.1	5729.5
2021	50	4157.9	--	501.4	4659.3	1313.8	5973.1
2022	50	4220.4	--	499.8	4720.2	915.8	5636.0
2023	50	4205.6	--	504.8	4710.4	906.8	5617.2
2024	50	4314.8	--	512.3	4827.1	824.8	5651.9
2025	50	4393.6	--	522.4	4916.0	905.8	5821.8
2026	50	4472.5	--	525.3	4997.8	813.7	5811.5
2027	50	4448.0	--	478.0	4926.0	423.3	5349.3
2028	36	3138.6	--	324.3	3462.9	288.4	3751.3
2029	10	958.9	--	95.8	1054.7	125.9	1180.6
Subtotal	680	62510.5	--	9716.2	72226.7	15789.7	88016.4

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	--	102.6	--	--	102.6	--	102.6
2008	6	963.7	--	40.4	1004.1	11.1	1015.2
2009	7	1095.8	--	187.7	1283.5	212.7	1496.2
2010	20	2760.2	--	313.3	3073.5	577.4	3650.9
2011	10	1691.2	--	284.7	1975.9	488.6	2464.5
2012	13	1361.7	--	307.0	1668.7	688.1	2356.8
2013	10	1111.5	--	332.7	1444.2	665.7	2109.9
2014	10	1092.0	--	367.9	1459.9	861.2	2321.1
2015	12	1164.7	--	581.7	1746.4	671.3	2417.7
2016	18	1577.8	--	626.0	2203.8	723.7	2927.5
2017	28	2148.3	--	702.7	2851.0	1056.2	3907.2
2018	50	3805.8	--	546.9	4352.7	812.5	5165.2
2019	50	3514.0	--	562.3	4076.3	774.2	4850.5
2020	50	3468.0	--	416.1	3884.1	957.5	4841.6
2021	50	3451.4	--	416.2	3867.6	1090.6	4958.2
2022	50	3441.4	--	407.5	3848.9	746.8	4595.7
2023	50	3368.7	--	404.2	3772.9	726.4	4499.3
2024	50	3395.0	--	403.2	3798.2	648.9	4447.1
2025	50	3395.9	--	403.8	3799.7	700.1	4499.8
2026	50	3395.7	--	398.9	3794.6	617.8	4412.4
2027	50	3317.4	--	356.4	3673.8	315.8	3989.6
2028	36	2299.5	--	237.5	2537.0	211.3	2748.3
2029	10	690.1	--	69.0	759.1	90.6	849.7
Subtotal	680	52612.4	--	8366.1	60978.5	13648.5	74627.0

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	963.7
2009	7	1095.8
2010	20	2760.2
2011	10	1691.2
2012	13	1361.7
2013	10	1111.5
2014	10	1092.0
2015	12	1164.7
2016	18	1577.8
2017	28	2148.3
2018	50	3805.8
2019	50	3514.0
2020	50	3468.0
2021	50	3451.4
2022	50	3441.4
2023	50	3368.7
2024	50	3395.0
2025	50	3415.9
2026	50	3415.7
2027	50	3347.4
2028	36	2329.5
2029	10	692.7
Subtotal	680	52612.4

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	2026.6	--	641.3	2667.9	547.6	3215.5
2015	32	2996.7	--	743.2	3739.9	625.2	4365.1
2016	48	3887.0	--	942.4	4829.4	807.0	5636.4
2017	48	3792.3	--	937.9	4730.2	852.5	5582.7
2018	60	4262.7	--	613.4	4876.1	761.5	5637.6
2019	60	4296.3	--	411.3	4707.6	660.6	5368.2
2020	60	4467.6	--	461.6	4929.2	915.3	5844.5
2021	80	5806.3	--	533.7	6340.0	980.4	7320.4
2022	80	5946.1	--	544.3	6490.4	1016.0	7506.4
2023	80	6014.3	--	551.2	6565.5	903.4	7468.9
2024	80	6186.3	--	566.5	6752.8	966.6	7719.4
2025	80	6337.8	--	576.1	6913.9	861.7	7775.6
2026	80	6478.9	--	589.5	7068.4	895.4	7963.8
2027	80	6633.1	--	605.3	7238.4	907.0	8145.4
2028	80	6899.1	--	625.3	7524.4	739.0	8263.4
2029	80	7200.2	--	650.8	7851.0	778.7	8629.7
2030	80	7442.8	--	671.1	8113.9	843.2	8957.1
2031	80	7643.5	--	688.4	8331.9	930.2	9262.1
2032	80	7855.8	--	698.0	8553.8	650.6	9204.4
2033	80	8074.3	--	711.8	8786.1	517.0	9303.1
2034	80	8294.2	--	723.2	9017.4	382.0	9399.4
2035	80	8426.4	--	727.2	9153.6	390.1	9543.7
2036	80	8219.3	--	626.8	8846.1	324.3	9170.4
2037	72	6690.7	--	353.7	7044.4	306.4	7350.8
Subtotal	1763	156722.6	--	17588.3	174310.9	20320.5	194631.4

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	--	116.0	--	--	116.0	--	116.0
2007	2	453.0	--	85.1	538.1	96.3	634.4
2008	6	1023.8	--	179.1	1202.9	136.9	1339.8
2009	7	1036.3	--	284.3	1320.6	180.5	1501.1
2010	10	1478.1	--	357.4	1835.5	279.0	2114.5
2011	22	2715.0	--	544.8	3259.8	670.6	3930.4
2012	18	1980.5	--	358.3	2338.8	769.3	3108.1
2013	19	1957.5	--	561.0	2518.5	581.9	3100.4
2014	19	1899.2	--	601.0	2500.2	513.2	3013.4
2015	32	2758.7	--	684.2	3442.9	575.5	4018.4
2016	48	3515.0	--	852.2	4367.2	729.8	5097.0
2017	48	3368.7	--	833.2	4201.9	757.2	4959.1
2018	60	3719.6	--	535.4	4255.0	664.4	4919.4
2019	60	3682.7	--	352.6	4035.3	566.2	4601.5
2020	60	3761.8	--	388.7	4150.5	770.6	4921.1
2021	80	4802.5	--	441.4	5243.9	811.0	6054.9
2022	80	4831.2	--	442.2	5273.4	825.6	6099.0
2023	80	4800.2	--	440.0	5240.2	721.0	5961.2
2024	80	4850.2	--	444.1	5294.3	757.9	6052.2
2025	80	4881.1	--	443.7	5324.8	663.6	5988.4
2026	80	4901.6	--	445.9	5347.5	677.4	6024.9
2027	80	4929.5	--	449.9	5379.4	674.0	6053.4
2028	80	5036.5	--	456.5	5493.0	539.5	6032.5
2029	80	5163.4	--	466.7	5630.1	558.4	6188.5
2030	80	5243.0	--	472.7	5715.7	594.0	6309.7
2031	80	5289.1	--	476.4	5765.5	643.7	6409.2
2032	80	5339.9	--	474.4	5814.3	442.3	6256.6
2033	80	5391.4	--	475.3	5866.7	345.2	6211.9
2034	80	5440.3	--	474.3	5914.6	250.6	6165.2
2035	80	5429.3	--	468.6	5897.9	251.3	6149.2
2036	80	5202.2	--	396.7	5598.9	205.3	5804.2
2037	72	4159.9	--	219.9	4379.8	190.5	4570.3
Subtotal	1763	119157.2	--	14106.0	133263.2	16442.7	149705.9

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	453.0
2008	6	1023.8
2009	7	1036.3
2010	10	1478.1
2011	22	2715.0
2012	18	1980.5
2013	19	1957.5
2014	19	1899.2
2015	32	2758.7
2016	48	3515.0
2017	48	3368.7
2018	60	3719.6
2019	60	3682.7
2020	60	3761.8
2021	80	4802.5
2022	80	4831.2
2023	80	4800.2
2024	80	4850.2
2025	80	4881.1
2026	80	4901.6
2027	80	4929.5
2028	80	5036.5
2029	80	5163.4
2030	80	5243.0
2031	80	5289.1
2032	80	5359.9
2033	80	5431.4
2034	80	5480.3
2035	80	5449.3
2036	80	5228.2
2037	72	4129.9
Subtotal	1763	119157.2

**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	34.1
2011	371.4
2012	139.5
2013	111.7
2014	195.0
2015	293.7
2016	136.6
2017	42.5
2018	--
2019	144.8
2020	147.4
2021	86.6
2022	64.6
2023	--
2024	234.2
Subtotal	2030.9

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

Fiscal Year	Total Program TY \$M
2004	19.1
2005	10.0
2006	--
2007	--
2008	100.3
2009	116.0
2010	125.1
2011	139.6
2012	55.1
2013	13.5
2014	60.0
2015	77.8
2016	79.6
2017	110.6
2018	77.1
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	2538.0

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

Fiscal Year	Total Program BY 2012 \$M
2004	21.7
2005	11.1
2006	--
2007	--
2008	104.4
2009	119.0
2010	125.7
2011	137.6
2012	53.4
2013	12.9
2014	56.2
2015	71.5
2016	71.9
2017	98.1
2018	67.2
2019	78.3
2020	113.2
2021	55.0
2022	59.3
2023	133.1
2024	111.4
2025	93.9
2026	89.5
2027	96.4
2028	74.2
2029	73.6
2030	66.6
2031	49.6
2032	48.3
2033	25.0
2034	16.2
2035	2.8
Subtotal	2137.1

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	--	--	--	--	--	--	139.6
2003	--	--	--	--	--	--	315.6
2004	--	--	--	--	--	--	395.8
2005	--	--	--	--	--	--	407.6
2006	--	--	--	--	--	--	443.8
2007	--	--	--	--	--	--	406.4
2008	--	--	--	--	--	--	383.1
2009	--	--	--	--	--	--	341.4
2010	--	--	--	--	--	--	398.5
2011	--	--	--	--	--	--	182.5
2012	--	--	--	--	--	--	272.0
2013	--	--	--	--	--	--	233.7
2014	--	--	--	--	--	--	193.0
2015	--	--	--	--	--	--	118.1
2016	--	--	--	--	--	--	70.1
2017	--	--	--	--	--	--	30.5
2018	--	--	--	--	--	--	15.3
Subtotal	5	--	--	--	--	--	4720.8

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	--	--	--	--	--	--	20.7
1997	--	--	--	--	--	--	63.3
1998	--	--	--	--	--	--	110.9
1999	--	--	--	--	--	--	112.5
2000	--	--	--	--	--	--	60.5
2001	--	--	--	--	--	--	81.9
2002	--	--	--	--	--	--	169.1
2003	--	--	--	--	--	--	376.9
2004	--	--	--	--	--	--	459.8
2005	--	--	--	--	--	--	461.4
2006	--	--	--	--	--	--	487.2
2007	--	--	--	--	--	--	435.4
2008	--	--	--	--	--	--	403.1
2009	--	--	--	--	--	--	354.7
2010	--	--	--	--	--	--	407.8
2011	--	--	--	--	--	--	183.3
2012	--	--	--	--	--	--	268.4
2013	--	--	--	--	--	--	226.8
2014	--	--	--	--	--	--	184.2
2015	--	--	--	--	--	--	110.7
2016	--	--	--	--	--	--	64.5
2017	--	--	--	--	--	--	27.6
2018	--	--	--	--	--	--	13.6
Subtotal	5	--	--	--	--	--	5106.0

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	--	--	--	--	--	--	141.3
2003	--	--	--	--	--	--	321.5
2004	--	--	--	--	--	--	407.9
2005	--	--	--	--	--	--	408.3
2006	--	--	--	--	--	--	428.5
2007	--	--	--	--	--	--	413.4
2008	--	--	--	--	--	--	362.3
2009	--	--	--	--	--	--	334.0
2010	--	--	--	--	--	--	369.6
2011	--	--	--	--	--	--	246.2
2012	--	--	--	--	--	--	256.8
2013	--	--	--	--	--	--	288.5
2014	--	--	--	--	--	--	247.6
2015	--	--	--	--	--	--	200.4
2016	--	--	--	--	--	--	145.9
2017	--	--	--	--	--	--	90.2
2018	--	--	--	--	--	--	15.1
Subtotal	9	--	--	--	--	--	5059.9

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	--	--	--	--	--	--	61.3
1998	--	--	--	--	--	--	111.8
1999	--	--	--	--	--	--	116.3
2000	--	--	--	--	--	--	57.9
2001	--	--	--	--	--	--	81.9
2002	--	--	--	--	--	--	171.2
2003	--	--	--	--	--	--	383.9
2004	--	--	--	--	--	--	473.9
2005	--	--	--	--	--	--	462.2
2006	--	--	--	--	--	--	470.4
2007	--	--	--	--	--	--	442.9
2008	--	--	--	--	--	--	381.2
2009	--	--	--	--	--	--	347.0
2010	--	--	--	--	--	--	378.2
2011	--	--	--	--	--	--	247.2
2012	--	--	--	--	--	--	253.4
2013	--	--	--	--	--	--	280.0
2014	--	--	--	--	--	--	236.3
2015	--	--	--	--	--	--	187.8
2016	--	--	--	--	--	--	134.3
2017	--	--	--	--	--	--	81.6
2018	--	--	--	--	--	--	13.4
Subtotal	9	--	--	--	--	--	5427.9

**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	--	--	--	--	--	--	13.9
1998	--	--	--	--	--	--	15.1
1999	--	--	--	--	--	--	10.7
2000	--	--	--	--	--	--	6.8
2001	--	--	--	--	--	--	0.5
2002	--	--	--	--	--	--	60.0
2003	--	--	--	--	--	--	83.4
2004	--	--	--	--	--	--	101.5
2005	--	--	--	--	--	--	148.6
2006	--	--	--	--	--	--	157.3
2007	--	--	--	--	--	--	139.2
2008	--	--	--	--	--	--	108.3
2009	--	--	--	--	--	--	50.4
2010	--	--	--	--	--	--	26.2
2011	--	--	--	--	--	--	36.4
2012	--	--	--	--	--	--	29.9
2013	--	--	--	--	--	--	28.3
2014	--	--	--	--	--	--	0.6
Subtotal	--	--	--	--	--	--	1019.8

**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	--	--	--	--	--	--	17.8
1998	--	--	--	--	--	--	19.2
1999	--	--	--	--	--	--	13.5
2000	--	--	--	--	--	--	8.4
2001	--	--	--	--	--	--	0.6
2002	--	--	--	--	--	--	72.7
2003	--	--	--	--	--	--	99.6
2004	--	--	--	--	--	--	117.9
2005	--	--	--	--	--	--	168.2
2006	--	--	--	--	--	--	172.7
2007	--	--	--	--	--	--	149.1
2008	--	--	--	--	--	--	114.0
2009	--	--	--	--	--	--	52.4
2010	--	--	--	--	--	--	26.8
2011	--	--	--	--	--	--	36.6
2012	--	--	--	--	--	--	29.5
2013	--	--	--	--	--	--	27.5
2014	--	--	--	--	--	--	0.6
Subtotal	--	--	--	--	--	--	1130.6

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
1994	--	--	--	--	--	--	5.7
1995	--	--	--	--	--	--	13.4
1996	--	--	--	--	--	--	4.1
Subtotal	--	--	--	--	--	--	23.2

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
1994	--	--	--	--	--	--	7.7
1995	--	--	--	--	--	--	17.7
1996	--	--	--	--	--	--	5.3
Subtotal	--	--	--	--	--	--	30.7

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	291.9	--	98.8	390.7	107.0	497.7
2015	32	448.5	--	113.1	561.6	131.5	693.1
2016	48	595.4	--	138.8	734.2	153.7	887.9
2017	48	596.7	--	130.0	726.7	156.4	883.1
2018	60	725.0	--	75.7	800.7	168.9	969.6
2019	60	740.9	--	35.5	776.4	174.9	951.3
2020	60	773.8	--	42.7	816.5	187.2	1003.7
2021	80	1007.3	--	42.6	1049.9	248.7	1298.6
2022	80	1025.4	--	42.8	1068.2	225.9	1294.1
2023	80	1032.7	--	43.5	1076.2	253.0	1329.2
2024	80	1053.3	--	44.2	1097.5	250.9	1348.4
2025	80	1070.1	--	44.3	1114.4	208.3	1322.7
2026	80	1086.4	--	45.1	1131.5	254.8	1386.3
2027	80	1104.0	--	46.4	1150.4	260.3	1410.7
2028	80	1136.6	--	47.0	1183.6	209.5	1393.1
2029	80	1173.8	--	48.0	1221.8	244.6	1466.4
2030	80	1202.4	--	48.9	1251.3	273.8	1525.1
2031	80	1222.1	--	49.9	1272.0	288.9	1560.9
2032	80	1242.3	--	49.5	1291.8	194.9	1486.7
2033	80	1263.3	--	49.8	1313.1	183.0	1496.1
2034	80	1283.9	--	49.7	1333.6	171.4	1505.0
2035	80	1302.1	--	48.8	1350.9	175.3	1526.2
2036	80	1317.1	--	26.9	1344.0	145.7	1489.7
2037	72	1066.5	--	--	1066.5	137.7	1204.2
Subtotal	1763	25162.6	--	1796.5	26959.1	5327.2	32286.3

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	29.3	86.8
2008	6	128.7	--	36.5	165.2	32.2	197.4
2009	7	130.4	--	65.6	196.0	34.2	230.2
2010	10	177.5	--	73.0	250.5	59.4	309.9
2011	22	348.6	--	90.4	439.0	134.8	573.8
2012	18	267.1	--	64.0	331.1	119.3	450.4
2013	19	274.7	--	93.9	368.6	105.2	473.8
2014	19	273.6	--	92.6	366.2	100.2	466.4
2015	32	412.9	--	104.0	516.9	121.1	638.0
2016	48	538.4	--	125.5	663.9	139.0	802.9
2017	48	530.1	--	115.4	645.5	139.0	784.5
2018	60	632.6	--	66.1	698.7	147.4	846.1
2019	60	635.1	--	30.4	665.5	149.9	815.4
2020	60	651.6	--	36.0	687.6	157.5	845.1
2021	80	833.2	--	35.2	868.4	205.7	1074.1
2022	80	833.1	--	34.8	867.9	183.6	1051.5
2023	80	824.2	--	34.7	858.9	202.0	1060.9
2024	80	825.8	--	34.7	860.5	196.7	1057.2
2025	80	824.1	--	34.1	858.2	160.5	1018.7
2026	80	821.9	--	34.1	856.0	192.8	1048.8
2027	80	820.5	--	34.5	855.0	193.4	1048.4
2028	80	829.7	--	34.3	864.0	153.0	1017.0
2029	80	841.7	--	34.4	876.1	175.5	1051.6
2030	80	847.0	--	34.4	881.4	192.9	1074.3
2031	80	845.7	--	34.5	880.2	199.9	1080.1
2032	80	844.4	--	33.6	878.0	132.6	1010.6
2033	80	843.5	--	33.3	876.8	122.2	999.0
2034	80	842.1	--	32.6	874.7	112.5	987.2
2035	80	839.0	--	31.4	870.4	113.0	983.4
2036	80	833.6	--	17.0	850.6	92.3	942.9
2037	72	663.1	--	--	663.1	85.6	748.7
Subtotal	1763	19074.7	--	1528.3	20603.0	4182.7	24785.7

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	50.3
2008	6	128.7
2009	7	130.0
2010	10	177.4
2011	22	348.5
2012	18	267.1
2013	19	274.7
2014	19	273.5
2015	32	412.8
2016	48	538.4
2017	48	530.0
2018	60	632.6
2019	60	635.0
2020	60	651.5
2021	80	833.1
2022	80	833.1
2023	80	824.2
2024	80	825.7
2025	80	824.1
2026	80	821.8
2027	80	820.4
2028	80	829.7
2029	80	841.7
2030	80	846.9
2031	80	845.6
2032	80	844.4
2033	80	843.5
2034	80	846.1
2035	80	840.9
2036	80	837.6
2037	72	665.4
Subtotal	1763	19074.7

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	557.7	--	110.3	668.0	118.8	786.8
2011	10	278.3	--	78.2	356.5	85.0	441.5
2012	13	276.2	--	83.3	359.5	89.4	448.9
2013	10	295.3	--	117.7	413.0	106.9	519.9
2014	10	284.4	--	108.7	393.1	146.6	539.7
2015	12	306.3	--	168.0	474.3	126.7	601.0
2016	18	421.0	--	174.8	595.8	148.9	744.7
2017	28	579.2	--	166.7	745.9	197.3	943.2
2018	50	1109.7	--	97.2	1206.9	198.0	1404.9
2019	50	1068.3	--	105.8	1174.1	179.5	1353.6
2020	50	1094.9	--	60.0	1154.9	244.0	1398.9
2021	50	1115.7	--	61.8	1177.5	298.8	1476.3
2022	50	1131.3	--	59.8	1191.1	193.9	1385.0
2023	50	1129.7	--	60.8	1190.5	235.4	1425.9
2024	50	1152.2	--	60.7	1212.9	209.1	1422.0
2025	50	1164.6	--	61.5	1226.1	233.9	1460.0
2026	50	1177.1	--	60.4	1237.5	206.0	1443.5
2027	50	1159.6	--	46.1	1205.7	114.2	1319.9
2028	36	666.3	--	22.6	688.9	78.8	767.7
2029	10	136.4	--	5.6	142.0	27.3	169.3
Subtotal	680	15675.7	--	1765.6	17441.3	3305.3	20746.6

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	--	29.0	--	--	29.0	--	29.0
2008	6	256.3	--	1.4	257.7	1.2	258.9
2009	7	306.0	--	55.8	361.8	67.3	429.1
2010	20	562.3	--	111.1	673.4	119.8	793.2
2011	10	275.6	--	77.4	353.0	84.2	437.2
2012	13	268.9	--	81.1	350.0	87.0	437.0
2013	10	282.7	--	112.5	395.2	102.4	497.6
2014	10	267.5	--	102.3	369.8	137.8	507.6
2015	12	283.0	--	155.1	438.1	117.1	555.2
2016	18	382.1	--	158.5	540.6	135.2	675.8
2017	28	516.3	--	148.7	665.0	175.9	840.9
2018	50	971.8	--	85.1	1056.9	173.4	1230.3
2019	50	919.0	--	91.0	1010.0	154.4	1164.4
2020	50	925.2	--	50.7	975.9	206.2	1182.1
2021	50	926.1	--	51.3	977.4	248.1	1225.5
2022	50	922.5	--	48.8	971.3	158.0	1129.3
2023	50	904.9	--	48.7	953.6	188.5	1142.1
2024	50	906.6	--	47.8	954.4	164.5	1118.9
2025	50	900.1	--	47.5	947.6	180.9	1128.5
2026	50	893.7	--	45.9	939.6	156.4	1096.0
2027	50	864.9	--	34.4	899.3	85.1	984.4
2028	36	488.2	--	16.6	504.8	57.6	562.4
2029	10	98.2	--	4.0	102.2	19.6	121.8
Subtotal	680	13150.9	--	1575.7	14726.6	2820.6	17547.2

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	256.3
2009	7	306.0
2010	20	562.3
2011	10	275.6
2012	13	268.9
2013	10	282.7
2014	10	267.5
2015	12	283.0
2016	18	382.1
2017	28	516.3
2018	50	971.8
2019	50	919.0
2020	50	925.2
2021	50	926.1
2022	50	922.5
2023	50	904.9
2024	50	906.6
2025	50	900.1
2026	50	893.7
2027	50	874.9
2028	36	498.2
2029	10	107.2
Subtotal	680	13150.9

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 ADM	Restructure ADM
Start Year	2006	2006
End Year	2015	2018

The Defense Acquisition Executive (DAE) approved the Low Rate Initial Production (LRIP) quantity of 465 (in six LRIP lots) in the original Milestone B Acquisition Decision Memorandum dated October 26, 2001. The current total LRIP quantity is more than 10% of the current production quantity which is necessary to prevent a break in production and to ramp up to full rate production. The LRIP quantity has been revised to 365 (in 11 LRIP lots) based on Department decisions and the FY 2012 National Defense Authorization Act and the FY 2013 President's Budget. The current LRIP quantity also exceeds 10% for the reasons cited above.

Low Rate Initial Production

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 ADM	Restructure ADM
Start Year	2006	2006
End Year	2015	2018

The Defense Acquisition Executive (DAE) approved the Low Rate Initial Production (LRIP) quantity of 465 engine installs to support LRIP aircraft production (in six LRIP lots) in the original Milestone B Acquisition Decision Memorandum dated October 26, 2001. The current total LRIP quantity is more than 10% of the current production quantity which is necessary to prevent a break in production and to ramp up to full rate production. The LRIP quantity has been revised to 365 engine installs to support LRIP aircraft production (in 11 LRIP lots) based on Department decisions and the FY 2012 National Defense Authorization Act and the FY 2013 President's Budget. The current LRIP quantity also exceeds 10% for the reasons cited above.

Foreign Military Sales

F-35 Aircraft

Country	Date of Sale	Quantity	Total Cost \$M	Memo
Israel	10/7/2010	19	2750.0	All 19 aircraft will be Conventional Take Off and Landing (CTOL) variant.

Foreign Military Sales

F-35 Engine

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

Nuclear Cost

F-35 Aircraft

None

F-35 Engine

None

Unit Cost**F-35 Aircraft****Unit Cost Report**

	BY2012 \$M	BY2012 \$M	
Unit Cost	Current UCR Baseline (MAR 2012 APB)	Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	276482.2	276483.0	
Quantity	2458	2457	
Unit Cost	112.483	112.529	+0.04
Average Procurement Unit Cost (APUC)			
Cost	224333.7	224332.9	
Quantity	2443	2443	
Unit Cost	91.827	91.827	0.00

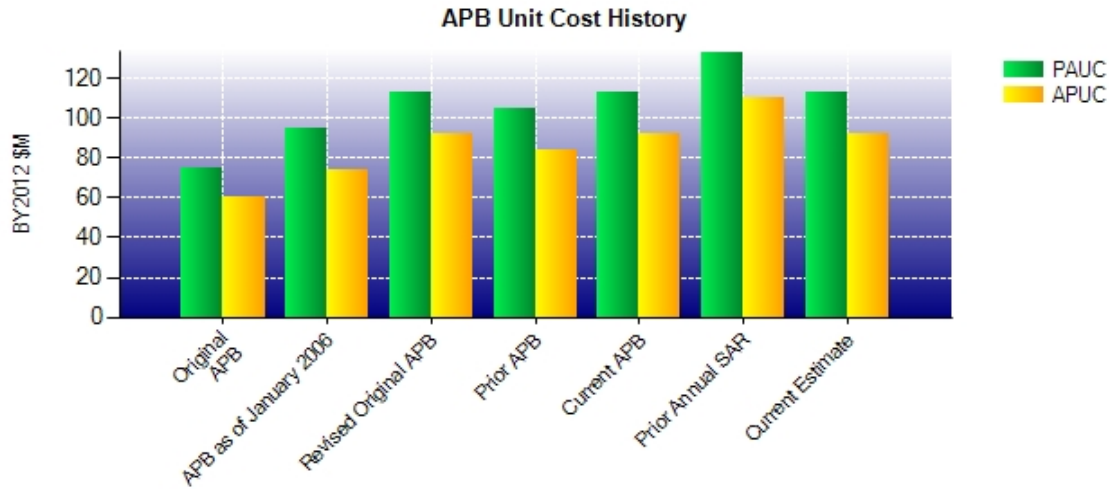
	BY2012 \$M	BY2012 \$M	
Unit Cost	Revised Original UCR Baseline (MAR 2012 APB)	Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	276482.2	276483.0	
Quantity	2458	2457	
Unit Cost	112.483	112.529	+0.04
Average Procurement Unit Cost (APUC)			
Cost	224333.7	224332.9	
Quantity	2443	2443	
Unit Cost	91.827	91.827	0.00

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 19 Foreign Military Sales aircraft and 697 International Partner aircraft.

F-35A (Conventional Takeoff and Landing) URF - \$67.8 M (BY 2012)
 F-35B (Short Takeoff and Vertical Landing) URF - \$78.8 M (BY 2012)
 F-35C (Carrier Variant) URF - \$76.1 M (BY 2012)

F-35 Aircraft

Unit Cost History



	Date	BY2012 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	OCT 2001	74.567	60.632	81.298	68.934
APB as of January 2006	MAR 2004	94.837	73.845	100.407	81.826
Revised Original APB	MAR 2012	112.483	91.827	135.010	115.697
Prior APB	MAR 2007	104.363	83.467	113.318	94.857
Current APB	MAR 2012	112.483	91.827	135.010	115.697
Prior Annual SAR	DEC 2010	132.900	109.536	154.413	132.806
Current Estimate	DEC 2011	112.529	91.827	135.065	115.697

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	
67.813	-1.421	2.585	14.022	4.365	44.276	0.000	3.425	67.252	135.065

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

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
57.386	-1.615	0.803	11.513	3.259	40.906	0.000	3.445	58.311	115.697

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 2010	N/A	OCT 2001
Milestone C	TBD	APR 2016	N/A	APR 2019
IOC	TBD	DEC 2012	N/A	TBD
Total Cost (TY \$M)	24800.0	194351.7	N/A	331855.2
Total Quantity	N/A	2866	N/A	2457
Prog. Acq. Unit Cost (PAUC)	N/A	67.813	N/A	135.065

Pursuant to section 2433, title 10, United States Code, the SAR Planning Estimate reflected Research, Development, Test, and Evaluation cost only.

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 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 Initial Operational Capability (IOC) date. The US Services require more definition in the program schedule regarding IOC requirements, to include operational test dates, before targeting a timeline. They are pleased with the progress they have witnessed over the past year, but wish to observe additional results during 2012. 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 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	53916.4	54028.1	
Quantity	2458	2457	
Unit Cost	21.935	21.989	+0.25
Average Procurement Unit Cost (APUC)			
Cost	42332.9	42332.9	
Quantity	2443	2443	
Unit Cost	17.328	17.328	0.00

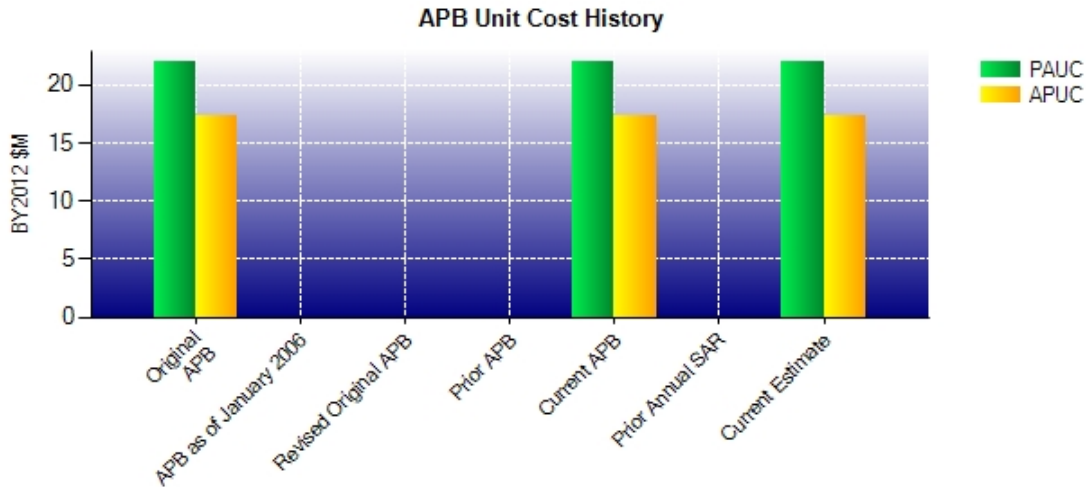
	BY2012 \$M	BY2012 \$M	
Unit Cost	Original UCR Baseline (MAR 2012 APB)	Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	53916.4	54028.1	
Quantity	2458	2457	
Unit Cost	21.935	21.989	+0.25
Average Procurement Unit Cost (APUC)			
Cost	42332.9	42332.9	
Quantity	2443	2443	
Unit Cost	17.328	17.328	0.00

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 19 Foreign Military Sales engines and 697 International Partner engines.

F-35A (Conventional Takeoff and Landing) URF - \$10.9 M (BY 2012)
 F-35B (Short Takeoff and Vertical Landing) URF - \$27.7 M (BY 2012)
 F-35C (Carrier Variant) URF - \$10.9 M (BY 2012)

F-35 Engine

Unit Cost History



	Date	BY2012 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	MAR 2012	21.981	17.328	25.979	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	21.981	17.328	25.979	21.708
Prior Annual SAR	DEC 2010	N/A	N/A	N/A	N/A
Current Estimate	DEC 2011	21.989	17.328	25.990	21.708

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	
13.485	-0.197	0.661	2.728	0.840	6.614	0.000	1.859	12.505	25.990

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

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
11.548	-0.321	0.327	2.112	0.595	5.578	0.000	1.869	10.160	21.708

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	38648.3	N/A	63856.6
Total Quantity	N/A	2852	N/A	2457
Prog. Acq. Unit Cost (PAUC)	N/A	13.551	N/A	25.990

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

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	28685.7	163666.0	2000.0	194351.7
Previous Changes				
Economic	+825.1	-7613.7	-4.9	-6793.5
Quantity	+126.2	-21509.5	--	-21383.3
Schedule	+6325.0	+22872.4	--	+29197.4
Engineering	+2510.5	+7961.1	+252.8	+10724.4
Estimating	+5264.5	+93896.9	-1696.7	+97464.7
Other	--	--	--	--
Support	--	+17614.3	--	+17614.3
Subtotal	+15051.3	+113221.5	-1448.8	+126824.0
Current Changes				
Economic	-366.4	+3668.6	--	+3302.2
Quantity	--	--	--	--
Schedule	--	+5254.8	--	+5254.8
Engineering	--	--	--	--
Estimating	+1039.5	+6035.5	+4246.1	+11321.1
Other	--	--	--	--
Support	--	-9198.6	--	-9198.6
Subtotal	+673.1	+5760.3	+4246.1	+10679.5
Total Changes	+15724.4	+118981.8	+2797.3	+137503.5
CE - Cost Variance	44410.1	282647.8	4797.3	331855.2
CE - Cost & Funding	44410.1	282647.8	4797.3	331855.2

Summary Base Year 2012 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	32488.7	144179.9	1810.1	178478.7
Previous Changes				
Economic	--	--	--	--
Quantity	+126.7	-16581.9	--	-16455.2
Schedule	+6577.3	+2059.0	--	+8636.3
Engineering	+2730.7	+6780.9	+274.3	+9785.9
Estimating	+4947.4	+76795.6	-1532.5	+80210.5
Other	--	--	--	--
Support	--	+15043.7	--	+15043.7
Subtotal	+14382.1	+84097.3	-1258.2	+97221.2
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+1111.3	+4231.5	+3616.1	+8958.9
Other	--	--	--	--
Support	--	-8175.8	--	-8175.8
Subtotal	+1111.3	-3944.3	+3616.1	+783.1
Total Changes	+15493.4	+80153.0	+2357.9	+98004.3
CE - Cost Variance	47982.1	224332.9	4168.0	276483.0
CE - Cost & Funding	47982.1	224332.9	4168.0	276483.0

Previous Estimate: September 2011

Cost Variance Memo

The allocation of spares between aircraft and engine was not consistent from SAR-10 to SAR-11. The allocation will be consistent in SAR 12. Using consistent allocation results in the following SAR-11 values: Aircraft DoN spares increased by ~\$850M; Aircraft USAF spares reduced by ~\$2B Engine DoN spares increased by ~\$90M; Engine USAF spares reduced by ~\$200M.

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-366.4
Increase due to revised estimate of required risk funding (Navy). (Estimating)	+541.6	+548.5
Increase due to revised estimate of required risk funding (Air Force). (Estimating)	+424.7	+408.9
Increase due to incorporating International Partner Transfer funds associated with Partially Common Follow-On Development. (Estimating)	+318.4	+321.9
Decrease due to Department of Navy (DoN) re-alignment of program funding , Congressional Marks, and Actual Funding Investment (Navy). (Estimating)	-318.6	-328.5
Decrease due to Air Force (AF) re-alignment of program funding , Congressional Marks, and Actual Funding Investment (Air Force). (Estimating)	-272.6	-283.7
Refined estimate. (Estimating)	+0.1	+0.1
Adjustment for current and prior escalation. (Estimating)	+417.7	+372.3
RDT&E Subtotal	+1111.3	+673.1

Procurement	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	+3668.6
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate and procurement completion extended two years to FY 2029 (Navy). (Schedule)	0.0	+1261.9
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate and procurement completion extended two years to FY 2037 (Air Force). (Schedule)	0.0	+3992.9
Increase due to higher than forecast contractor labor hours (Air Force) (Estimating)	+1511.7	+2310.6
Increase due to higher than forecast contractor labor hours (Navy) (Estimating)	+1284.4	+1710.9
Increase due to revised, slower International procurement quantity profile (Air Force) (Estimating)	+228.6	+351.7
Increase due to revised, slower International procurement quantity profile (Navy) (Estimating)	+360.8	+480.9
Increase due to higher than expected material burdens placed on subcontractors by prime contractor (Air Force) (Estimating)	+637.1	+952.3
Increase due to higher than expected material burdens placed on subcontractors by prime contractor (Navy) (Estimating)	+612.6	+816.2
Decrease due to lower than forecast prime contractor settlement costs with subcontractors (Air Force) (Estimating)	-378.0	-540.4
Decrease due to lower than forecast prime contractor settlement costs with subcontractors (Navy) (Estimating)	-54.3	-72.7
Adjustment for current and prior escalation. (Estimating)	+28.6	+26.0
Adjustment for current and prior escalation. (Support)	-1.9	-2.3
Decrease in Other Support due to maturation of technical baseline, definition of customer requirements, and further definition of Service beddown plans (Navy). (Support)	-1264.6	-1265.9
Decrease in Other Support due to maturation of technical baseline, definition of customer requirements, and further definition of Service beddown plans (Air Force). (Support)	-2208.7	-2343.4
Decrease in Initial Spares due to revised estimate of required risk funding (Navy). (Support)	-625.6	-594.7

Decrease in Initial Spares due to revised estimate of required risk funding (Air Force). (Support)	-4075.0	-4992.3
Procurement Subtotal	-3944.3	+5760.3

MILCON	\$M	
	Base Year	Then Year
Current Change Explanations		
Increase due to revised estimate of MILCON requirements (Navy). (Estimating)	+2000.1	+2231.9
Increase due to revised estimate of MILCON requirements (Air Force). (Estimating)	+1615.5	+2013.7
Adjustment for current and prior escalation. (Estimating)	+0.5	+0.5
MILCON Subtotal	+3616.1	+4246.1

F-35 Engine

Cost Variance Summary

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	5714.3	32934.0	--	38648.3
Previous Changes				
Economic	+201.1	-1389.4	--	-1188.3
Quantity	+30.8	-3925.4	--	-3894.6
Schedule	+1541.9	+4174.1	--	+5716.0
Engineering	+612.0	+1452.9	--	+2064.9
Estimating	+2559.6	+13343.3	--	+15902.9
Other	--	--	--	--
Support	--	+967.9	--	+967.9
Subtotal	+4945.4	+14623.4	--	+19568.8
Current Changes				
Economic	+99.2	+606.2	--	+705.4
Quantity	--	--	--	--
Schedule	--	+986.5	--	+986.5
Engineering	--	--	--	--
Estimating	+64.8	+283.9	--	+348.7
Other	--	--	--	--
Support	--	+3598.9	--	+3598.9
Subtotal	+164.0	+5475.5	--	+5639.5
Total Changes	+5109.4	+20098.9	--	+25208.3
CE - Cost Variance	10823.7	53032.9	--	63856.6
CE - Cost & Funding	10823.7	53032.9	--	63856.6

Summary Base Year 2012 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	6488.0	28741.5	--	35229.5
Previous Changes				
Economic	--	--	--	--
Quantity	+30.9	-3026.1	--	-2995.2
Schedule	+1603.5	+375.8	--	+1979.3
Engineering	+665.7	+1237.5	--	+1903.2
Estimating	+2728.7	+11163.4	--	+13892.1
Other	--	--	--	--
Support	--	+826.4	--	+826.4
Subtotal	+5028.8	+10577.0	--	+15605.8
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+178.4	+263.4	--	+441.8
Other	--	--	--	--
Support	--	+2751.0	--	+2751.0
Subtotal	+178.4	+3014.4	--	+3192.8
Total Changes	+5207.2	+13591.4	--	+18798.6
CE - Cost Variance	11695.2	42332.9	--	54028.1
CE - Cost & Funding	11695.2	42332.9	--	54028.1

Previous Estimate: September 2011

Cost Variance Memo

The allocation of spares between aircraft and engine was not consistent from SAR-10 to SAR-11. The allocation will be consistent in SAR 12. Using consistent allocation results in the following SAR-11 values: Aircraft DoN spares increased by ~\$850M; Aircraft USAF spares reduced by ~\$2B Engine DoN spares increased by ~\$90M; Engine USAF spares reduced by ~\$200M.

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	+99.2
Increase due to revised estimate of required risk funding based (Navy). (Estimating)	+346.3	+324.7
Increase due to revised estimate of required risk funding (Air Force). (Estimating)	+265.1	+238.7
Decrease due to Department of Navy (DoN) re-alignment of program funding , Congressional Marks, and Actual Funding Investment (Navy). (Estimating)	-253.1	-271.4
Decrease due to DoN re-alignment of program funding , Congressional Marks, and Actual Funding Investment (Air Force). (Estimating)	-186.3	-200.4
Increase due to incorporating International Partner Transfer funds associated with Partially Common Follow-On Development. (Estimating)	+58.5	+29.2
Adjustment for current and prior escalation. (Estimating)	-52.1	-56.0
RDT&E Subtotal	+178.4	+164.0

Procurement	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	+606.2
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate and procurement completion extended two years to FY 2029 (Navy). (Schedule)	0.0	+234.8
Increase for revised DoD procurement profile (i.e. lower near-term ramp rate and procurement completion extended two years to FY 2037 (Air Force). (Schedule)	0.0	+751.7
Decrease due to incorporation of latest actual costs from early LRIP lots (Air Force). (Estimating)	-558.8	-683.6
Decrease due to incorporation of latest actual costs from early LRIP lots (Navy). (Estimating)	-383.4	-438.4
Increase due allocating non-recurring costs such as tooling, modifications, and Diminishing Manufacturing Sources (DMS) to the engine previously booked against the total aircraft (Air Force). (Estimating)	+537.5	+580.3
Increase due allocating non-recurring costs such as tooling, modifications, and Diminishing Manufacturing Sources (DMS) to the engine previously booked against the total aircraft (Navy). (Estimating)	+661.6	+819.6
Adjustment for current and prior escalation. (Estimating)	+6.5	+6.0
Adjustment for current and prior escalation. (Support)	-0.2	-0.1
Decrease in Other Support due to maturation of technical baseline, definition of customer requirements, and further definition of Service beddown plans (Air Force). (Support)	-245.3	-260.1
Decrease in Other Support due to maturation of technical baseline, definition of customer requirements, and further definition of Service beddown plans (Navy). (Support)	-140.5	-140.4
Increase in Initial Spares due to revised estimate of required risk funding (Air Force). (Support)	+1902.3	+2514.6
Increase in Initial Spares due to revised estimate of required risk funding (Navy). (Support)	+1234.7	+1484.9
Procurement Subtotal	+3014.4	+5475.5

Contracts

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	27430.5	N/A	14	31190.5	31762.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2011)	-219.7	-113.4
Previous Cumulative Variances	-998.8	-391.5
Net Change	+779.1	+278.1

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to formal approval and implementation of an Over Target Baseline (OTB) during 2011. The OTB was based on the 2010 Technical Baseline Review (TBR) which was performed to assess the schedule and funding necessary to complete the work of planned scope, additional effort required to de-risk the balance of SDD, and funding necessary to maintain an appropriate level of management reserve.

The favorable net change in the schedule variance is due to formal approval and implementation of an Over Target Baseline (OTB) during 2011. The OTB was based on the 2010 Technical Baseline Review.

Contract Comments

The difference between the initial contract price target and the current contract price target is due to schedule extensions and cost overruns associated with the approved program restructure that were executed in 2005 and 2009, both of which incorporated OTBs. In addition, the contract price has also been impacted by the execution of contract modifications that adjusted tasks, estimated cost and available fee; and the removal of unearned award fee.

The contract price increased since award primarily due to schedule extensions and cost overruns associated with the approved program restructures that were executed in 2005 and 2009, both of which incorporated OTBs. The Estimated Price at Completion reflects the revised program schedule and content following the TBR that was conducted in 2010. The TBR recommendations are the basis of a program replan which will result in implementation of an OTB and an OTS in 2012. A Schedule Risk Assessment (SRA) and Review (IBR) were conducted in the fourth quarter of CY 2011. The Estimated Price at Completion may be adjusted as impacts of the program restructure and TBR are finalized.

Appropriation: RDT&E

Contract Name	JSF Propulsion F135 SDD
Contractor	Pratt and Whitney
Contractor Location	East Hartford, CT 06108
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	6807.5	N/A	30	7664.6	8334.8

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2011)	-19.6	-13.6
Previous Cumulative Variances	-77.2	-50.5
Net Change	+57.6	+36.9

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to over-target baseline (OTB); driven primarily by unsatisfactory performance in the Rolls Royce Lift Fan, Rolls Royce Industrial Management, Nozzle and the Engine Fan. Both over-target schedule (OTS) and OTB variances were reset to zero; the cost variance amount reset was \$116.97M. Since OTB, cumulative cost variance degraded primarily due to unfavorable 2010 and 2011 General and Administrative rate adjustments totaling \$13.5M and unfavorable performance of \$6.1M in the Engine Fan.

The favorable net change in the schedule variance is due to OTS driven primarily by unsatisfactory performance in the Rolls Royce Lift Fan, Rolls Royce Industrial Management, Nozzle and the Engine Fan. OTS variances were reset to zero and the schedule variance amount reset was \$49.34M. Since OTS, cumulative schedule variance degraded due primarily to schedule delays in the Rolls Royce Lift Fan, Rolls Royce 3 Bearing Swivel Module and Turbine Exhaust Case components.

Contract Comments

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

The difference between the initial contract price target and the current contract price target is due to a combination of the following actions: modifications adding workscope and associated cost and fee increases, providing over target costs in 2009, and decreases in fee to remove unearned award fee. Specific actions added in 2011 include Partner Safety Case, Alternate Fuel Study, Low Observable Health Assessment System integration, procurement of one additional spare CTOL and STOVV spare engine authorized by the Technical Baseline Review (TBR) and execution of a Undefinitized Contract Action to allow 16 time-critical tasks to be started per the TBR.

The contract price increased since award primarily due to schedule extension and added scope in accordance with the approved program restructure that was definitized in 2005, as well as, funding for affordability tasks. The Estimated Price at Completion reflects the revised program schedule and content following the TBR conducted in 2010. The TBR recommendations are the basis of the program restructure which will result in implementation of an OTB and OTS in 2012. The Program Manager's Estimate at Completion is currently being re-assessed and will be updated after the Integrated Baseline Review scheduled for May 2012.

Appropriation: RDT&E

Contract Name	JSF Propulsion F136 SDD
Contractor	GE/Rolls-Royce
Contractor Location	Cincinnati, OH 45215
Contract Number, Type	N00019-04-C-0093, CPAF
Award Date	August 19, 2005
Definitization Date	August 19, 2005

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
2486.2	N/A	6	2418.9	N/A	6	3055.3	2433.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/6/2012)	-142.4	-46.4
Previous Cumulative Variances	-140.5	-47.0
Net Change	-1.9	+0.6

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to higher costs than planned in the Rolls Royce Lift Fan, Rolls Royce 3 Bearing Swivel Module, Nozzle and Rolls Royce Industrial Engineering support.

The favorable net change in the schedule variance is due to the recovery of prior months schedule.

Contract Comments

The difference between the initial contract price target and the current contract price target is due to contract termination.

This is the final report for this contract. On April 25, 2011, a notice of termination for convenience was issued by the F-35 Primary Contracting Officer (PCO) to the General Electric/Rolls Royce Fighter Engine Team, Limited Liability Company on the F136 System Development and Demonstration contract.

Appropriation: Procurement

Contract Name JSF Air System LRIP 2
Contractor Lockheed Martin
Contractor Location Fort Worth, TX 76101
Contract Number, Type N00019-07-C-0097, CPIF/CPAF
Award Date July 27, 2007
Definitization Date May 08, 2008

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
2208.0	N/A	12	2619.9	N/A	12	2546.8	2594.8

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2011)	-251.0	-18.0
Previous Cumulative Variances	-250.9	-130.1
Net Change	-0.1	+112.1

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to higher than planned airframe related efforts: wing out-of-station work, rework and delays in assembly.

The favorable net change in the schedule variance is due to the Over Target Schedule which incorporated the replanned schedule in May 2011 and due to the completion of Low Rate Initial Production (LRIP) 2 Conventional Takeoff and Landing aircraft during this period.

Contract Comments

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

The difference between the initial contract price target and the current contract price target is due to addition of Diminishing Manufacturing Sources scope as well as added scope from the LRIP 2 modifications.

Appropriation: Procurement

Contract Name **JSF Propulsion F135 LRIP 2**
 Contractor Pratt & Whitney
 Contractor Location East Hartford, CT 06108
 Contract Number, Type N00019-07-C-0098, CPAF/CPIF
 Award Date August 24, 2007
 Definitization Date August 23, 2008

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
392.1	N/A	16	547.7	N/A	16	526.4	554.9

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/23/2011)	-63.8	-9.0
Previous Cumulative Variances	-36.7	-29.8
Net Change	-27.1	+20.8

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to higher costs than planned in the Rolls Royce Lift Fan, Rolls Royce 3 Bearing Swivel Module, Nozzle and Rolls Royce Industrial Engineering support.

The favorable net change in the schedule variance is due to the recovery of prior months schedule.

Contract Comments

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

The difference between the initial contract price target and the current contract price target is due to a combination of the following actions: modifications adding workscope and associated cost and fee increases and decreases in fee to remove unearned award fee. Specific actions added in 2011 include Laser Measurement and providing over target cost funding of \$36.1M.

The contract price has increased since the initial award due to the exercise of the Short Takeoff and Vertical Landing variant Option (established to meet the "fly before you buy" requirement), the exercise of the proposal preparation option and the additional spare fan Follow-On Development kit procurement. The estimated price at completion contains the identified contract price changes as well as activities costing more than originally planned, rate changes and the estimated cost of future risks.

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/CPAF
 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	2781.8	N/A	17	3464.5	3602.4

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2011)	-315.0	-65.0
Previous Cumulative Variances	-163.5	-136.5
Net Change	-151.5	+71.5

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to higher than planned airframe-related efforts. Drivers include wing material as a result of increased Bill of Materials (BOM) due to supplier settlements, scrap, and material allocations and wing labor due to overtime required for out-of-station work and workarounds. Additional drivers include Recurring Manufacturing Support and recurring engineering support as well as Low Rate Initial Production 5 (LRIP) proposal prep activities and the impacts of foreign exchange rates. Unfavorable performance is also due to earlier part shortages in mate and rework parts in vehicle systems.

The favorable net change in the schedule variance is due to the Over Target Schedule restructure effort.

Contract Comments

The difference between the initial contract price target and the current contract price target is due to proposal prep over-target costs, and the Government share of over-target costs

Appropriation: Procurement

Contract Name	Propulsion JSF F135 LRIP 3
Contractor	Pratt and Whitney
Contractor Location	East Hartford, CT 06108
Contract Number, Type	N00019-08-C-0033, CPIF/CPAF
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
649.2	N/A	21	699.3	N/A	21	725.5	739.6

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/23/2011)	-44.4	-28.7
Previous Cumulative Variances	-11.8	-108.3
Net Change	-32.6	+79.6

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to higher costs than planned in the Rolls Royce Lift Fan, Engine Assembly, Rolls Royce Industrial Engineering support.

The favorable net change in the schedule variance is due to the recovery of prior months schedule.

Contract Comments

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

The difference between the initial contract price target and the current contract price target is due to a combination of the following actions: modifications adding workscope, associated cost & fee increases and decreases in fee to remove unearned award fee. Specific actions added in 2011 include Laser Measurement and providing over target cost funding of \$34.1M.

The contract price increased since award due to exercise of Tooling Option and procurement of additional Conventional Takeoff and Landing spare parts. The Estimated Price at Completion reflects the identified contract price changes as well as activities costing more than originally planned, rate changes and the estimated cost of future risks.

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	3899.2	4273.5	32	4925.6	5003.3

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2011)	-131.4	-130.6
Previous Cumulative Variances	0.0	0.0
Net Change	-131.4	-130.6

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to early part shortages driving Out-of-Station inefficiencies, quality issues driving repair/rework and an increase in overtime spending to mitigate future schedule impacts. In addition, Wing inefficiencies continue to drive higher than anticipated costs for Recurring Manufacturing and Recurring Engineering Support labor.

The unfavorable net change in the schedule variance is due to production delays for supplier BAE due to unreliable tooling availability, quality issues driving repair/rework and late part deliveries. In addition, Wing-related assembly delays are driving Schedule Variances for subsystem material that cannot be issued to the aircraft as originally planned.

Contract Comments

The difference between the initial contract price target and the current contract price target is due to exercising options to purchase a Netherlands CTOL aircraft and Ancillary Mission Equipment/Pilot Flight Equipment for The Netherlands.

Appropriation: RDT&E

Contract Name	JSF Propulsion F135 LRIP 4
Contractor	Pratt and Whitney
Contractor Location	East Hartford, CT 06108
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	1154.2	N/A	32	1178.8	1154.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/23/2011)	-26.5	-118.1
Previous Cumulative Variances	--	--
Net Change	-26.5	-118.1

Cost And Schedule Variance Explanations

The unfavorable cumulative cost variance is due to the Rolls Royce Lift fan, Materials Management Services, Low Pressure Turbine and Turbine Exhaust Case and Augmentor module.

The unfavorable cumulative schedule variance is due to delays in Low Rate Initial Production (LRIP) 3 that carried over into LRIP 4.

Contract Comments

The difference between the initial contract price target and the current contract price target is due to definitization of the contract that was the initial contract price, the execution of The Netherlands option for one Conventional Takeoff and Landing (CTOL) propulsion system and adding a requirement for engine and lift system laser measurement effort.

This is the first time this contract is being reported.

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	17	11	2443	0.45%
Total Program Quantities Delivered	31	25	2457	1.02%

Expenditures and Appropriations (TY \$M)

Total Acquisition Cost	331855.2	Years Appropriated	19
Expenditures To Date	43202.1	Percent Years Appropriated	43.18%
Percent Expended	13.02%	Appropriated to Date	62482.0
Total Funding Years	44	Percent Appropriated	18.83%

F-35 Engine

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	14	14	14	100.00%
Production	17	11	2443	0.45%
Total Program Quantities Delivered	31	25	2457	1.02%

Expenditures and Appropriations (TY \$M)

Total Acquisition Cost	63856.6	Years Appropriated	19
Expenditures To Date	12033.6	Percent Years Appropriated	43.18%
Percent Expended	18.84%	Appropriated to Date	13377.2
Total Funding Years	44	Percent Appropriated	20.95%

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 LRIP 4 contract, the aircraft is considered an RDT&E-funded SDD asset.

Operating and Support Cost

F-35 Aircraft

Assumptions And Ground Rules

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. 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 when F-35 specific data is not available.

F-35 O&S costs shown in comparison with actual costs of an antecedent system reflect estimated cost-per-flying-hour for the F-35 Conventional Takeoff and Landing (CTOL) variant only. The CTOL variant will make up the majority of the F-35 aircraft DoD buy, 1,763 of the 2,443 total. The O&S differences between F-35 CTOL and F-16C/D are representative of comparisons across legacy fleets. The F-16 costs have been developed in a joint effort with the Air Force Cost Analysis Agency and have been normalized to reflect the cost of fuel and annual number of flight hours in the F-35 estimate. The F-35 cost-per-flying-hour assumes full funding of the program's requirements; the F-16 cost-per-flying-hour reflects actual FY11 expenditures. Given the significant increase in capability, it is not unreasonable that the F-35 costs more to operate and sustain than certain legacy aircraft.

Total O&S Cost (\$ in Millions) below reflects total O&S costs for all three U.S. variants based on an estimated 30 year service life and predicted attrition and usage rates, and are not a simple extrapolation of CTOL costs shown in the upper 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.

Cost Element	Costs BY2012 \$K	
	F-35 Aircraft Cost per Flying Hour (\$)	F-16C/D Cost per Flying Hour (\$)
Unit-Level Manpower	8.434	8.968
Unit Operations	7.830	5.256
Maintenance	8.729	5.724
Sustaining Support	3.508	1.342
Continuing System Improvements	3.422	1.180
Indirect Support	0.000	0.000
Other	0.000	0.000
Total Unitized Cost (Base Year 2012 \$)	31.923	22.470

Total O&S Costs \$M	F-35 Aircraft	F-16C/D
Base Year	617014.4	--
Then Year	1113273.0	--

F-35 Engine

Assumptions And Ground Rules

Costs BY2012 \$K		
Cost Element	F-35 Engine	No Antecedent
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	--	--
Sustaining Support	--	--
Continuing System Improvements	--	--
Indirect Support	--	--
Other	--	--
Total Unitized Cost (Base Year 2012 \$)	--	--

Total O&S Costs \$M	F-35 Engine	No Antecedent
Base Year	--	--
Then Year	--	--

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