



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-265



F-22

As of December 31, 2010

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

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Program Information

Designation And Nomenclature (Popular Name)

F-22 Raptor

DoD Component

Air Force

Responsible Office

Responsible Office

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References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated September 23, 2005

Approved APB

DAE Approved Acquisition Program Baseline (APB) dated May 25, 2007

Mission and Description

The F-22 is the first fifth generation fighter. It combines stealth, speed, maneuverability, integrated avionics, multi-role precision attack, and improved supportability. These attributes represent an exponential leap in warfighting capabilities and allow for the full realization of operational concepts vital to 21st Century joint warfighting. The F-22 is a critical component of the Global Strike concept of operations with unmatched air-to-air and air-to-ground capabilities. The Raptor ensures air dominance, rapidly and at great distances, by countering and defeating threats, including those attacking friendly forces and those attempting to deny access by our forces. The F-22 is superior to any known or projected adversary fighter aircraft; there is no substitute for F-22 joint warfighting capabilities.

Executive Summary

The F-22 continues to successfully deploy to worldwide locations.

The program will deliver the final 22 aircraft by spring of 2012. To date, the program has delivered 93 aircraft on time or early with 45 zero defect aircraft. Production shutdown is under way with government owned tooling being processed for storage at Sierra Army Depot. As the program has nearly completed production, the Office of the Secretary of Defense, with Air Force concurrence, has determined that this is the F-22 Final Selected Acquisition Report. As of March 2011, F-22 reports greater than 90 percent expended and delivered pursuant to Section 2432, of title 10, United State Code.

The F-22 is executing its established modernization program. Increment 3.1, which enhances the F-22 air-to-ground capabilities, has completed Developmental Testing and will enter Follow On Test & Evaluation early in 2011.

There are no significant software related issues at this time.

Threshold Breaches

APB Breaches	
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Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input checked="" 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"/>

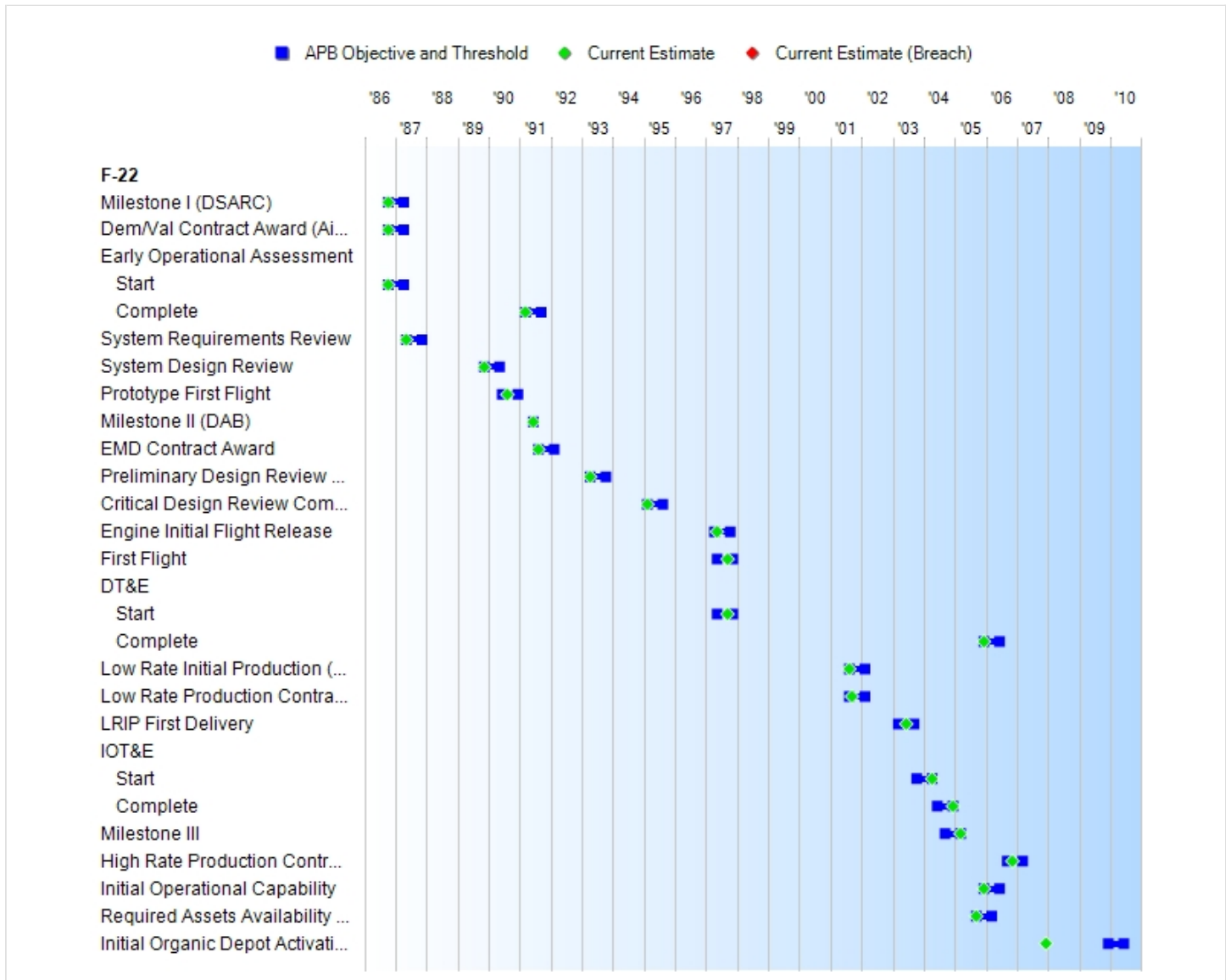
Explanation of Breach

This report shows the F-22 program in breach of Research, Development, Test and Evaluation (RDT&E) cost. The F-22 program was directed by Acquisition Decision Memorandum (ADM) to include weapon system modernization as part of the F-22 ACAT ID program. The November 2, 2003 ADM states, "I define the current program as production through Spiral 3B (now Increment 3) for the enhanced air-to-ground mission, including radar, air-to-ground targeting, and Small Diameter Bomb carriage capability." Subsequent ADMs reinforced this program scope direction. F-22 modernization has always extended beyond the Future Year's Defense Program (FYDP) with no to-complete cost; thus, the increased development budget is F-22 modernization cost. Currently, F-22 is working with the Air Force and the Office of the Secretary of Defense for Acquisition Technology and Logistics to establish each modernization increment as a Major Defense Acquisition Program, each with its own baseline.

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

Schedule



Milestones	SAR Baseline Prod Est	Current APB Production		Current Estimate
		Objective/Threshold		
Milestone I (DSARC)	OCT 1986	OCT 1986	APR 1987	OCT 1986
Dem/Val Contract Award (Airframe only)	OCT 1986	OCT 1986	APR 1987	OCT 1986
Early Operational Assessment				
Start	OCT 1986	OCT 1986	APR 1987	OCT 1986
Complete	MAR 1991	MAR 1991	SEP 1991	MAR 1991
System Requirements Review	MAY 1987	MAY 1987	NOV 1987	MAY 1987
System Design Review	NOV 1989	NOV 1989	MAY 1990	NOV 1989
Prototype First Flight	JUN 1990	JUN 1990	DEC 1990	AUG 1990
Milestone II (DAB)	JUN 1991	JUN 1991	JUN 1991	JUN 1991
EMD Contract Award	AUG 1991	AUG 1991	FEB 1992	AUG 1991
Preliminary Design Review Complete	APR 1993	APR 1993	OCT 1993	APR 1993
Critical Design Review Complete	FEB 1995	FEB 1995	AUG 1995	FEB 1995
Engine Initial Flight Release	APR 1997	APR 1997	OCT 1997	MAY 1997
First Flight	MAY 1997	MAY 1997	NOV 1997	SEP 1997
DT&E				
Start	MAY 1997	MAY 1997	NOV 1997	SEP 1997
Complete	DEC 2005	DEC 2005	JUN 2006	DEC 2005
Low Rate Initial Production (LRIP) Decision	AUG 2001	AUG 2001	FEB 2002	AUG 2001
Low Rate Production Contract Award	AUG 2001	AUG 2001	FEB 2002	SEP 2001
LRIP First Delivery	MAR 2003	MAR 2003	SEP 2003	JUN 2003
IOT&E				
Start	OCT 2003	OCT 2003	APR 2004	APR 2004
Complete	JUN 2004	JUN 2004	DEC 2004	DEC 2004
Milestone III	SEP 2004	SEP 2004	MAR 2005	MAR 2005
High Rate Production Contract Award	NOV 2005	SEP 2006	MAR 2007	NOV 2006
Initial Operational Capability	DEC 2005	DEC 2005	JUN 2006	DEC 2005
Required Assets Availability (RAA)	SEP 2005	SEP 2005	MAR 2006	SEP 2005
Initial Organic Depot Activation Capability	DEC 2009	DEC 2009	JUN 2010	DEC 2007

Acronyms And Abbreviations

DAB - Defense Acquisition Board
Dem/Val - Demonstration and Validation
DSARC - Defense Systems Acquisition Review Council
DT&E - Developmental Test and Evaluation
EMD - Engineering and Manufacturing Development
IOT&E - Initial Operational Test and Evaluation

Change Explanations

None

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Payload, Internal					
Missile Load**	6 AIM-120 + 2 AIM-9	6 AIM-120 + 2 AIM-9	6 AIM-120 + 2 AIM-9	6 AIM-120 + 2 AIM-9	6 AIM-120 + 2 AIM-9
Reduced All-Aspect Radar Cross Section (RCS)					
Front Sector RCS**/+	*	*	*	*	* #
Maneuverability (max power sustained G) (30000 ft) (Mach)					
@0.9 Mach**	3.9	3.9	3.7	3.7	3.7
Reliability, Maintainability, and Supportability					
C-17s / 24 Primary Aircraft Inventory (PAI) Squadron for Deployment (#a/c)**	6	6	7	6.5	6.33
Mean Time Between Maintenance (MTBM) (hrs)**	3.0	3.0	3.0	3.15	3.0
Supercruise**					
Vmax/Opt Alt/Mil Power (Mn)	1.5	1.5	1.5	1.76	1.76
Acceleration/.8-1.5/30K (sec)**	54	54	54	52.4	52.4
Interoperability	Accomplishment of all IERs	Accomplishment of all IERs	Accomplishment of all critical top level IERs	Accomplishment of all IERs	Accomplishment of all IERs
USD(A) Risk Assessment Items:					
Direct on-and-off Maintenance Personnel (spaces per ac)	10.5	10.5	12.5	12.46	9.7

Requirements Source: Operational Requirements Document (ORD), CAF 304-83-I/II/III-A, F/A-22 Advanced Tactical Fighter, dated February 17, 2004. F-22A Enhanced Global Strike Capability Production Document (CPD), dated April 23, 2007.

Acronyms And Abbreviations

ac - Aircraft

Mil Power - Military Power (Power w/o after burner)
Opt Alt - Optimum Altitude
USD(A) - Under Secretary of Defense Acquisition
Vmax - Maximum Velocity

Change Explanations

(Ch-0) * Classification/Control is beyond the level of this document.

** Indicates Operational Readiness Document (ORD) Key Performance Parameters (KPPs).

+ Classified KPP values are beyond the level of this document but can be viewed in classified annexes of Operation Requirements Document (ORD), CAF 304-83-I/II/III-A, F/A-22Advanced Tactical Fighter, February 17, 2004.

Current estimate is better than threshold.

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

Track To Budget**RDT&E**

APPN 3600	BA 07	PE 0207138F	(Air Force)	
	Project 4785	F-22 Squadrons		
APPN 3600	BA 03	PE 0603109F	(Air Force)	
		Air Force	(Shared)	(Sunk)
APPN 3600	BA 03	PE 0603230F	(Air Force)	
		Air Force	(Shared)	(Sunk)
APPN 3600	BA 05	PE 0604227F	(Air Force)	
	Project 4673	Air Force		(Sunk)
APPN 3600	BA 05	PE 0604239F	(Air Force)	
		F-22 Squadrons		(Sunk)
	Project 4069	F-22 Squadrons		(Sunk)
	Project 4874	Air Force		(Sunk)
APPN 3600	BA 04	PE 0604250F	(Air Force)	
	Project 3786	Project 3786		(Sunk)

Procurement

APPN 3010	BA 07	PE 0207138F	(Air Force)	
	ICN 000071	F-22 Squadrons	(Shared)	
	ICN 000075	F-22 Squadrons	(Shared)	
APPN 3010	BA 06	PE 0207138F	(Air Force)	
	ICN 000999	F-22 Squadrons	(Shared)	
APPN 3010	BA 01	PE 0207219F	(Air Force)	
	ICN ATF000	F-22 Squadrons		
APPN 3010	BA 05	PE 0207138F	(Air Force)	

	ICN F02200	F-22 Squadrons	
APPN 3010	BA 05	PE 0207219F	(Air Force)
	ICN F02200	F-22 Squadrons	
APPN 3010	BA 05	PE 0207138F	(Air Force)
	ICN F022A0	F-22 Squadrons	
APPN 3011	BA 01	PE 0207219F	(Air Force)
	ICN 352010	F-22 Squadrons	(Sunk)
	ICN 356010	F-22 Squadrons	(Sunk)

MILCON

APPN 3300	BA 01	PE 0207219F	(Air Force)
		F-22 Squadrons	

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2005 \$M			BY2005 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	32234.8	32234.8	35458.3	35582.6 ¹	28719.6	28719.6	32423.4
Procurement	31606.5	31606.5	34767.2	33245.8	32152.4	32152.4	34237.0
Flyaway	27139.9	--	--	27623.1	27584.7	--	28335.8
Recurring	24704.3	--	--	25426.9	25155.7	--	26158.2
Non Recurring	2435.6	--	--	2196.2	2429.0	--	2177.6
Support	4466.6	--	--	5622.7	4567.7	--	5901.2
Other Support	4442.1	--	--	5598.0	4544.8	--	5878.3
Initial Spares	24.5	--	--	24.7	22.9	--	22.9
MILCON	440.4	587.5	646.3	635.8	451.7	626.0	676.6
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	64281.7	64428.8	N/A	69464.2	61323.7	61498.0	67337.0

¹ APB Breach

This report shows the F-22 program in breach of RDT&E cost. The F-22 program was directed by Acquisition Decision Memorandum (ADM) to include weapon system modernization as part of the F-22 ACAT ID program. The November 2, 2003 ADM states, "I define the current program as production through Spiral 3B (now Increment 3) for the enhanced air-to-ground mission, including radar, air-to-ground targeting, and Small Diameter Bomb (SDB) carriage capability." Subsequent ADMs reinforced this program scope direction. F-22 modernization has always extended beyond the Future Year Defense Plan (FYDP) with no to-complete cost, thus the increased development budget is F-22 modernization cost. OSD is currently considering establishing F-22 modernization into several ACAT I programs, each with separate baselines.

These figures represent the Fiscal Year 2012 President's Budget (FY 2012 PB) position for the program of record through Increment 3.2 and do not include the total Increment 3.3 costs. The Fiscal Year 2009 funding totals include \$600M Supplemental Appropriations Act for four Lot 10 aircraft.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	9	9	9
Procurement	172	172	179
Total	181	181	188

Cost and Funding

Funding Summary

Appropriation and Quantity Summary FY2012 President's Budget / December 2010 SAR (TY\$ M)

Appropriation	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
RDT&E	28899.8	576.3	718.4	689.2	526.6	484.9	528.2	0.0	32423.4
Procurement	33974.9	158.0	104.1	0.0	0.0	0.0	0.0	0.0	34237.0
MILCON	626.3	22.1	16.5	11.7	0.0	0.0	0.0	0.0	676.6
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2012 Total	63501.0	756.4	839.0	700.9	526.6	484.9	528.2	0.0	67337.0
PB 2011 Total	63673.5	756.4	673.2	479.6	454.0	677.4	0.0	0.0	66714.1
Delta	-172.5	0.0	165.8	221.3	72.6	-192.5	528.2	0.0	622.9

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	9	0	0	0	0	0	0	0	0	9
Production	0	179	0	0	0	0	0	0	0	179
PB 2012 Total	9	179	0	0	0	0	0	0	0	188
PB 2011 Total	9	179	0	0	0	0	0	0	0	188
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY\$

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
1983	--	--	--	--	--	--	20.0
1984	--	--	--	--	--	--	34.1
1985	--	--	--	--	--	--	90.8
1986	--	--	--	--	--	--	152.1
1987	--	--	--	--	--	--	297.2
1988	--	--	--	--	--	--	504.4
1989	--	--	--	--	--	--	800.1
1990	--	--	--	--	--	--	1124.2
1991	--	--	--	--	--	--	953.3
1992	--	--	--	--	--	--	1606.8
1993	--	--	--	--	--	--	1925.2
1994	--	--	--	--	--	--	2058.8
1995	--	--	--	--	--	--	2280.6
1996	--	--	--	--	--	--	2153.4
1997	--	--	--	--	--	--	1814.5
1998	--	--	--	--	--	--	2010.2
1999	--	--	--	--	--	--	1566.1
2000	--	--	--	--	--	--	2239.1
2001	--	--	--	--	--	--	1411.6
2002	--	--	--	--	--	--	876.6
2003	--	--	--	--	--	--	908.5
2004	--	--	--	--	--	--	909.1
2005	--	--	--	--	--	--	529.1
2006	--	--	--	--	--	--	398.5
2007	--	--	--	--	--	--	490.5
2008	--	--	--	--	--	--	605.8
2009	--	--	--	--	--	--	579.7
2010	--	--	--	--	--	--	559.5
2011	--	--	--	--	--	--	576.3
2012	--	--	--	--	--	--	718.4
2013	--	--	--	--	--	--	689.2
2014	--	--	--	--	--	--	526.6
2015	--	--	--	--	--	--	484.9
2016	--	--	--	--	--	--	528.2
Subtotal	9	--	--	--	--	--	32423.4

Annual Funding BY\$

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2005 \$M	Non End Item Recurring Flyaway BY 2005 \$M	Non Recurring Flyaway BY 2005 \$M	Total Flyaway BY 2005 \$M	Total Support BY 2005 \$M	Total Program BY 2005 \$M
1983	--	--	--	--	--	--	33.1
1984	--	--	--	--	--	--	54.3
1985	--	--	--	--	--	--	139.9
1986	--	--	--	--	--	--	228.7
1987	--	--	--	--	--	--	427.5
1988	--	--	--	--	--	--	706.6
1989	--	--	--	--	--	--	1069.4
1990	--	--	--	--	--	--	1457.6
1991	--	--	--	--	--	--	1191.2
1992	--	--	--	--	--	--	1951.2
1993	--	--	--	--	--	--	2289.0
1994	--	--	--	--	--	--	2407.1
1995	--	--	--	--	--	--	2617.0
1996	--	--	--	--	--	--	2427.4
1997	--	--	--	--	--	--	2018.2
1998	--	--	--	--	--	--	2221.6
1999	--	--	--	--	--	--	1712.8
2000	--	--	--	--	--	--	2412.5
2001	--	--	--	--	--	--	1499.5
2002	--	--	--	--	--	--	921.5
2003	--	--	--	--	--	--	942.1
2004	--	--	--	--	--	--	919.7
2005	--	--	--	--	--	--	521.9
2006	--	--	--	--	--	--	381.6
2007	--	--	--	--	--	--	457.7
2008	--	--	--	--	--	--	554.3
2009	--	--	--	--	--	--	523.7
2010	--	--	--	--	--	--	500.3
2011	--	--	--	--	--	--	508.4
2012	--	--	--	--	--	--	624.4
2013	--	--	--	--	--	--	589.3
2014	--	--	--	--	--	--	442.8
2015	--	--	--	--	--	--	400.9
2016	--	--	--	--	--	--	429.4
Subtotal	9	--	--	--	--	--	35582.6

Annual Funding TY\$

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
1997	--	7.5	--	--	7.5	--	7.5
1998	--	72.4	--	--	72.4	--	72.4
1999	2	697.4	--	70.6	768.0	33.5	801.5
2000	--	283.2	--	--	283.2	--	283.2
2001	10	2003.7	--	217.6	2221.3	315.2	2536.5
2002	13	2086.6	--	535.3	2621.9	410.8	3032.7
2003	21	3385.0	--	537.6	3922.6	543.5	4466.1
2004	22	3194.0	--	333.7	3527.7	637.4	4165.1
2005	24	3082.6	--	163.3	3245.9	807.1	4053.0
2006	23	2966.6	--	132.3	3098.9	609.5	3708.4
2007	20	2899.9	--	96.6	2996.5	433.9	3430.4
2008	20	2745.8	--	81.6	2827.4	871.7	3699.1
2009	24	2616.5	--	9.0	2625.5	881.6	3507.1
2010	--	--	--	--	--	94.9	94.9
2011	--	--	--	--	--	158.0	158.0
2012	--	--	--	--	--	104.1	104.1
Subtotal	179	26041.2	--	2177.6	28218.8	5901.2	34120.0

Annual Funding BY\$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2005 \$M	Non End Item Recurring Flyaway BY 2005 \$M	Non Recurring Flyaway BY 2005 \$M	Total Flyaway BY 2005 \$M	Total Support BY 2005 \$M	Total Program BY 2005 \$M
1997	--	8.2	--	--	8.2	--	8.2
1998	--	78.9	--	--	78.9	--	78.9
1999	2	752.3	--	76.2	828.5	36.1	864.6
2000	--	300.7	--	--	300.7	--	300.7
2001	10	2107.2	--	228.8	2336.0	331.6	2667.6
2002	13	2167.9	--	556.2	2724.1	426.8	3150.9
2003	21	3459.7	--	549.5	4009.2	555.4	4564.6
2004	22	3180.3	--	332.3	3512.6	634.6	4147.2
2005	24	2982.6	--	158.0	3140.6	780.9	3921.5
2006	23	2796.6	--	124.7	2921.3	574.6	3495.9
2007	20	2663.7	--	88.7	2752.4	398.6	3151.0
2008	20	2484.7	--	73.8	2558.5	788.8	3347.3
2009	24	2333.9	--	8.0	2341.9	786.4	3128.3
2010	--	--	--	--	--	83.4	83.4
2011	--	--	--	--	--	136.8	136.8
2012	--	--	--	--	--	88.7	88.7
Subtotal	179	25316.7	--	2196.2	27512.9	5622.7	33135.6

Cost Quantity Information**3010 | Procurement | Aircraft Procurement, Air Force**

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2005 \$M
1997	--	--
1998	--	--
1999	2	839.4
2000	--	--
2001	10	2407.9
2002	13	2167.9
2003	21	3459.7
2004	22	3180.3
2005	24	2982.6
2006	23	2796.6
2007	20	2663.7
2008	20	2484.7
2009	24	2333.9
2010	--	--
2011	--	--
2012	--	--
Subtotal	179	25316.7

Annual Funding TY\$

3011 | Procurement | Procurement of Ammunition, 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
1999	--	--	0.4	--	0.4	--	0.4
2000	--	--	1.4	--	1.4	--	1.4
2001	--	--	--	--	--	--	--
2002	--	--	4.3	--	4.3	--	4.3
2003	--	--	6.3	--	6.3	--	6.3
2004	--	--	18.8	--	18.8	--	18.8
2005	--	--	16.8	--	16.8	--	16.8
2006	--	--	11.2	--	11.2	--	11.2
2007	--	--	16.5	--	16.5	--	16.5
2008	--	--	12.6	--	12.6	--	12.6
2009	--	--	12.8	--	12.8	--	12.8
2010	--	--	15.9	--	15.9	--	15.9
Subtotal	--	--	117.0	--	117.0	--	117.0

Annual Funding BY\$

3011 | Procurement | Procurement of Ammunition, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2005 \$M	Non End Item Recurring Flyaway BY 2005 \$M	Non Recurring Flyaway BY 2005 \$M	Total Flyaway BY 2005 \$M	Total Support BY 2005 \$M	Total Program BY 2005 \$M
1999	--	--	0.4	--	0.4	--	0.4
2000	--	--	1.5	--	1.5	--	1.5
2001	--	--	--	--	--	--	--
2002	--	--	4.5	--	4.5	--	4.5
2003	--	--	6.4	--	6.4	--	6.4
2004	--	--	18.7	--	18.7	--	18.7
2005	--	--	16.2	--	16.2	--	16.2
2006	--	--	10.6	--	10.6	--	10.6
2007	--	--	15.2	--	15.2	--	15.2
2008	--	--	11.4	--	11.4	--	11.4
2009	--	--	11.4	--	11.4	--	11.4
2010	--	--	13.9	--	13.9	--	13.9
Subtotal	--	--	110.2	--	110.2	--	110.2

Annual Funding TY\$
3300 | MILCON | Military Construction, Air
Force

Fiscal Year	Total Program TY \$M
1995	4.6
1996	12.1
1997	4.4
1998	--
1999	--
2000	18.6
2001	25.3
2002	53.4
2003	42.6
2004	32.5
2005	28.4
2006	48.0
2007	61.7
2008	57.4
2009	198.5
2010	38.8
2011	22.1
2012	16.5
2013	11.7
Subtotal	676.6

Annual Funding BY\$
3300 | MILCON | Military Construction, Air Force

Fiscal Year	Total Program BY 2005 \$M
1995	5.2
1996	13.5
1997	4.9
1998	--
1999	--
2000	19.8
2001	26.6
2002	55.4
2003	43.2
2004	32.1
2005	27.2
2006	44.9
2007	56.5
2008	51.9
2009	177.4
2010	34.1
2011	19.2
2012	14.1
2013	9.8
Subtotal	635.8

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	8/14/2001	8/14/2001
Approved Quantity	101	101
Reference	ADM (September 14, 2001)	ADM (September 14, 2001)
Start Year	2001	2001
End Year	2005	2005

The Defense Acquisition Executive approved 101 aircraft as the LRIP quantity in the F-22 Program Low-Rate Initial Production (LRIP) Decision memorandum, September 14, 2001, to establish an initial production base for the system and an orderly increase in the production rate. The LRIP program consisted of Lots 1-5 and delivered 90 aircraft.

Foreign Military Sales

None

Nuclear Cost

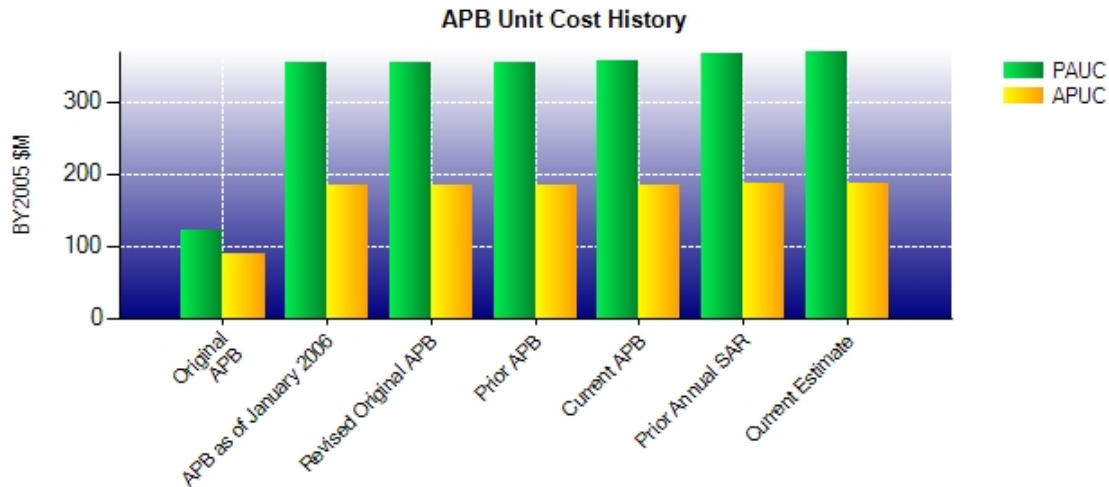
None

Unit Cost**Unit Cost Report**

	BY2005 \$M	BY2005 \$M	
Unit Cost	Current UCR Baseline (MAY 2007 APB)	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	64428.8	69464.2	
Quantity	181	188	
Unit Cost	355.960	369.490	+3.80
Average Procurement Unit Cost (APUC)			
Cost	31606.5	33245.8	
Quantity	172	179	
Unit Cost	183.759	185.731	+1.07

	BY2005 \$M	BY2005 \$M	
Unit Cost	Revised Original UCR Baseline (SEP 2005 APB)	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	64281.7	69464.2	
Quantity	181	188	
Unit Cost	355.148	369.490	+4.04
Average Procurement Unit Cost (APUC)			
Cost	31606.5	33245.8	
Quantity	172	179	
Unit Cost	183.759	185.731	+1.07

Unit Cost History



	Date	BY2005 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	FEB 1992	122.705	88.563	152.946	122.333
APB as of January 2006	SEP 2005	355.148	183.759	338.805	186.933
Revised Original APB	SEP 2005	355.148	183.759	338.805	186.933
Prior APB	MAR 2006	355.148	183.759	338.805	186.933
Current APB	MAY 2007	355.960	183.759	339.768	186.933
Prior Annual SAR	DEC 2009	366.731	186.921	354.862	192.629
Current Estimate	DEC 2010	369.490	185.731	358.176	191.268

SAR Unit Cost History

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

Initial PAUC Dev Est	Changes								PAUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
152.946	-46.390	131.145	34.475	19.168	83.667	0.000	-36.206	185.859	338.805

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

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
338.805	-0.259	-8.033	0.340	0.000	20.370	0.000	6.953	19.371	358.176

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

Initial APUC Dev Est	Changes								APUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
122.333	-43.943	57.429	19.819	1.255	69.387	0.000	-39.347	64.600	186.933

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

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
186.933	0.992	-2.500	0.358	0.000	-1.817	0.000	7.302	4.335	191.268

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	OCT 1986	OCT 1986	OCT 1986	OCT 1986
Milestone II	JUN 1991	JUN 1991	JUN 1991	JUN 1991
Milestone III	DEC 1999	DEC 1999	SEP 2004	MAR 2005
IOC	SEP 2003	SEP 2003	DEC 2005	DEC 2005
Total Cost (TY \$M)	99109.0	99109.0	61323.7	67337.0
Total Quantity	648	648	181	188
Prog. Acq. Unit Cost (PAUC)	152.946	152.946	338.805	358.176

Cost Variance**Cost Variance Summary**

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	28719.6	32152.4	451.7	61323.7
Previous Changes				
Economic	-219.2	+181.0	-2.7	-40.9
Quantity	--	+861.2	--	+861.2
Schedule	--	+64.0	--	+64.0
Engineering	--	--	--	--
Estimating	+3110.7	-87.1	+173.4	+3197.0
Other	--	--	--	--
Support	--	+1309.1	--	+1309.1
Subtotal	+2891.5	+2328.2	+170.7	+5390.4
Current Changes				
Economic	-4.1	-3.5	-0.1	-7.7
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+816.4	-238.1	+54.3	+632.6
Other	--	--	--	--
Support	--	-2.0	--	-2.0
Subtotal	+812.3	-243.6	+54.2	+622.9
Total Changes	+3703.8	+2084.6	+224.9	+6013.3
CE - Cost Variance	32423.4	34237.0	676.6	67337.0
CE - Cost & Funding	32423.4	34237.0	676.6	67337.0

Summary Base Year 2005 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	32234.8	31606.5	440.4	64281.7
Previous Changes				
Economic	--	--	--	--
Quantity	--	+781.8	--	+781.8
Schedule	--	-0.9	--	-0.9
Engineering	--	--	--	--
Estimating	+2663.3	-84.2	+148.0	+2727.1
Other	--	--	--	--
Support	--	+1155.7	--	+1155.7
Subtotal	+2663.3	+1852.4	+148.0	+4663.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+684.5	-213.5	+47.4	+518.4
Other	--	--	--	--
Support	--	+0.4	--	+0.4
Subtotal	+684.5	-213.1	+47.4	+518.8
Total Changes	+3347.8	+1639.3	+195.4	+5182.5
CE - Cost Variance	35582.6	33245.8	635.8	69464.2
CE - Cost & Funding	35582.6	33245.8	635.8	69464.2

Previous Estimate: December 2009

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-4.1
Adjustment for current and prior escalation. (Estimating)	+0.4	+0.4
Reduction due to Congressional General Recissions (CGR's) & Withholds (Estimating)	-8.8	-9.8
Due to the addition of FY 2016 Baseline Extension (Estimating)	+429.4	+528.2
FY 2012 President's Budget Modernization Bundling Adjustments (Modernization Increments, Common Configuration, Reliability and Maintainability Maturation Program (RAMMP), etc. (Estimating)	+263.5	+297.6
RDT&E Subtotal	+684.5	+812.3

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-3.5
Adjustment for current and prior escalation. (Estimating)	+2.2	+2.4
Decrease due to adjustments for prior year actuals. (Estimating)	-198.2	-220.5
Decrease in estimate for F-22 shutdown planning. (Estimating)	-17.5	-20.0
Adjustment for current and prior escalation. (Support)	+0.8	+0.9
Decrease in Other Support to reflect adjustment for prior year actuals (Air Force). (Support)	-0.4	-2.9
Procurement Subtotal	-213.1	-243.6

MILCON	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.1
Adjustment for current and prior escalation. (Estimating)	+0.1	+0.1
Adjustments for military construction projects at F-22 operational locations. (Estimating)	+47.3	+54.2
MILCON Subtotal	+47.4	+54.2

Contracts

General Contract Memo

Contract F33657-02-D-0009/2 DO0031, Increment 3.1 Phases C/D, is 90 percent complete and has been removed. The contract number for the Lot 10 Advance Buy Aircraft was reported incorrectly in the December 2009 SAR as F33657-09-C-2900. This error has been corrected and is properly reported under FA8611-09-C-2900.

Appropriation: RDT&E

Contract Name	DO 0051/Modernization Lab Infrastructure
Contractor	Lockheed Martin Corporation
Contractor Location	Ft. Worth, TX 76101-0748
Contract Number, Type	F33657-02-D-0009/1, CPIF/FFP/TM/CPFF
Award Date	December 23, 2008
Definitization Date	December 23, 2008

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
234.6	N/A	N/A	279.2	N/A	N/A	279.2	279.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2010)	+10.0	-2.3
Previous Cumulative Variances	+4.6	-0.2
Net Change	+5.4	-2.1

Cost And Schedule Variance Explanations

Earned Value data is representative of the Cost Plus effort only.

During the period between December 2009 and December 2010, laboratory operations under Delivery Order 51 incurred a negative schedule variance due external dependencies from Increment 3.1 and Update 3; delays in both programs resulted in the delivery order falling behind planned schedules. The deferred costs should consume portions of the positive cost variance as the delivery order schedule is recovered.

Contract Comments

Initial Target Price included effort for 2009 Modernization Lab Infrastructure and Sustainment Lab Infrastructure, 2009 Air Education and Training Command (AETC) and Air Force Operational Test and Evaluation Center (AFOTEC) Pilot Training. Two one-year options (2010 and 2011) were established for these efforts. Current Target includes option exercise of 2010 and 2011 efforts and addition of flight test operations and Agile Usage Charges, maintenance of the Pilot Training Devices Lab (PTDL) and the Advanced Dynamic R-F Simulator (ADRS), and underrun of 2009 and 2010 AETC Pilot Training.

Appropriation: Procurement

Contract Name **DO 0044/Reliability & Maintainability Maturation Program Non-Recurring Effort**
 Contractor Lockheed Martin Corporation
 Contractor Location Ft. Worth, TX 76101-0748
 Contract Number, Type F33657-02-D-0009/3, CPFF/TM/FFP
 Award Date December 21, 2006
 Definitization Date October 24, 2007

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
17.1	N/A	N/A	345.8	N/A	N/A	345.8	345.8

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (9/30/2010)	-3.6	-0.8
Previous Cumulative Variances	-5.1	-1.1
Net Change	+1.5	+0.3

Cost And Schedule Variance Explanations

Earned Value data is representative of the Cost Plus Fixed Fee (CPFF) portion only.

RAMMP encompasses many projects and retrofit efforts. In total, the projects are performing ahead of their cost projections. Positive cost and schedule variance reflect Improvements made to corrosion modifications which were previously performing poorly.

Contract Comments

Initial Target Price based on twelve-month period of performance. Options were added for three additional years of performance. Current Target Price includes exercise of numerous options and various Engineering and Contract Change Proposals, retrofit kits and subsequent install costs, nonrecurring engineering for carry-over projects, and testing of aircraft retrofits. Net underrun of all cost plus efforts to date is \$0.3M, CPFF efforts \$199.1M, Firm Fixed Price (FFP) efforts \$72.3M, Time and Materials (T&M) efforts \$74.4M.

Appropriation: RDT&E

Contract Name **DO 0073/Incr 3.2 Accelerated & Incr 3.2B Full**
 Contractor Lockheed Martin Aero Corp
 Contractor Location Ft Worth, TX 76101-0748
 Contract Number, Type F33657-02-D-0009/4, CPIF
 Award Date January 01, 2011
 Definitization Date January 01, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
209.4	N/A	N/A	209.4	N/A	N/A	209.4	209.4

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	0.0	0.0
Previous Cumulative Variances	--	--
Net Change	+0.0	+0.0

Cost And Schedule Variance Explanations

Earned Value Management (EVM) data is not available for this reporting period. Contract was awarded January 1, 2011. First time cost data submission is due late March 2011.

Contract Comments

This is the initial report for this contract.

Appropriation: Procurement

Contract Name F-22 Lot 7, 8, and 9 Multiyear A/C
Contractor Lockheed Martin Aero Corp
Contractor Location Ft Worth, TX 76101-0748
Contract Number, Type FA8611-06-C-2899, FPEPA/FFP/CPFF/FPIF
Award Date December 21, 2005
Definitization Date July 31, 2007

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
193.9	N/A	N/A	7540.0	N/A	60	7540.0	7540.0

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FPEPA/FFP/CPFF/FPIF contract.

Contract Comments

Initial Target was for Lot 7 Advance Procurement only. Current Target includes Lot 7, 8, and 9 aircraft (60 each), Diminishing Manufacturing Sources (DMS) Program, Integrated Maintenance Information System (IMIS), Training System Installation, Peculiar Support Equipment, Mission Support/Operational Debrief System, Initial Spares, Program Support Sustainment and Producibility, Common Configuration Program, Retrofit Parts Buy, numerous Engineering and Contract Change Proposals, Pilot Training Devices, initial shipsets of spare wings and aft booms, and increase in Air Vehicle Acceptance cost-cap. Fixed Price-Economic Price Adjustment (FP-EPA) efforts \$4.9B, FFP efforts \$2.4B, Fixed Price Incentive Firm (FPIF) efforts \$27M, CPFF efforts \$186M. Cost performance reports requested only on Pilot Training Devices efforts - \$40.4M.

Appropriation: Procurement

Contract Name F-22 Lot 7, 8, and 9 Multiyear Engines
Contractor United Technologies Corp (Pratt & Whitney)
Contractor Location East Hartford, CT 06108-0968
Contract Number, Type FA8611-06-C-2900, FPEPA/FFP/CPFF
Award Date May 19, 2006
Definitization Date July 31, 2007

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
5.0	N/A	N/A	1357.9	N/A	137	1357.9	1357.9

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FPEPA/FFP/CPFF contract.

Contract Comments

Initial Target Price was for Lot 7 Advance Procurement only. Current Target Price includes Lot 7, 8, and 9 engines (120 each), 14 each spare engines, three Combined Test Force (CTF) engines, price reduction on Lot 7 for material savings clause, 2010 Production Shutdown Plan, and redesign of Rotor 5 Bolt Hole. FP-EPA efforts \$958.8M. FFP efforts \$397.2M, CPFF efforts \$1.9M.

Appropriation: Procurement

Contract Name	Lot 10 Advance Buy A/C
Contractor	Lockheed Martin Corporation
Contractor Location	Ft. Worth, TX 76101-0748
Contract Number, Type	FA8611-09-C-2900, FFP
Award Date	November 26, 2008
Definitization Date	

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
178.0	N/A	4	640.5	N/A	4	640.5	640.5

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FFP contract.

Contract Comments

This is the initial report for this contract.

Initial Target Price was for Lot 10 Advance Procurement only. Current Target Price includes Undefined Contract Action for four aircraft, aft fuselage titanium residual for 16 shipsets, and Program Support Sustainment Processes and Services. Definitization anticipated mid April 2011.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	9	9	9	100.00%
Production	179	161	179	89.94%
Total Program Quantities Delivered	188	170	188	90.43%

Expenditures and Appropriations (TY \$M)			
Total Acquisition Cost	67337.0	Years Appropriated	29
Expenditures To Date	60846.8	Percent Years Appropriated	85.29%
Percent Expended	90.36%	Appropriated to Date	64257.4
Total Funding Years	34	Percent Appropriated	95.43%

Expenditures identified as of February 28, 2011

Operating and Support Cost

Assumptions And Ground Rules

In preparation for the Full Rate production decision in 2004, the Air Force Cost Analysis Agency (AFCAA) worked with the F-22 System Program Office and the F-15 System Program Office to develop updated estimates of both the F-22 and F-15C to provide an equitable comparison of ownership costs. The estimate provided here is an update of the 2004 estimate, based on analyses completed by the F-22 program office in 2010. The update brings the estimate in line with the current approved F-22 production program and operational concepts.

The F-15C is antecedent to the F-22; both are two engine air-to-air fighters with similar operational concepts. The F-15C estimate was based on the fleetwide data for Fiscal Year 1996 through Fiscal Year 2000 and utilized various data sources including the Air Force Total Ownership Cost (AFTOC) system, AFI 65-503 and Air Force Cost Analysis Improvement Group (CAIG) rates. The F-22 estimate was based on a combination of actual F-22 operating costs for Fiscal Year 2006 through Fiscal Year 2009, AFI 65-503 Cost and Planning Factors, and currently budgeted F-22 costs.

For purposes of this cost comparison, the F-22 concept of operations was assumed to be an 18 aircraft fighter squadron with a utilization rate of 306 flight hours per aircraft per year. The peacetime utilization rate for the weapon system was used to estimate the Operation & Sustainment (O&S) cost. Training and combat coded squadrons were addressed as operationally the same for this O&S estimate. Total aircraft buy for the F-22 was 187 at the time of this study. Total aircraft included in the F-22 O&S estimate in this study was 164, the number of Primary Aircraft Inventory (PAI) aircraft.

For purposes of this cost comparison, the F-15C concept of operation was also an 18 aircraft fighter squadron with a utilization rate of 306 flight hours per aircraft per year. Actual F-15C costs were normalized to match the F-22 concept of operations and number of PAI.

The first table below compares the total estimated O&S costs of F-22 and F-15 squadrons during a steady state year. The second table displays the total projected F-22 O&S costs over the life of the program (Fiscal Year 2006 through 2033).

Total O&S Cost in BY/TY\$ are not provided for the F-15C due to the retiring of aircraft and reduction of squadron and fleet sizes.

Costs BY2005 \$M		
Cost Element	F-22 Squadron/Year During Steady State	F-15C Avg Annual Cost Per Squadron
Unit-Level Manpower	44.6	35.2
Unit Operations	32.5	29.9
Maintenance	81.0	54.9
Sustaining Support	33.1	6.4
Continuing System Improvements	11.4	15.1
Indirect Support	0.0	0.0
Other	0.0	0.0
Total Unitized Cost (Base Year 2005 \$)	202.6	141.5

Total O&S Costs \$M	F-22	F-15C
Base Year	47029.0	--
Then Year	65009.0	--