

UNCLASSIFIED

PE NUMBER: 0604239F
 PE TITLE: F-22 EMD

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2004
---	-------------------------------------

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604239F F-22 EMD
--	--

Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	843.999	615.467	210.000	75.794	0.000	0.000	0.000	0.000	25,666.079
4069 Advanced Tactical Fighter FSD	843.999	615.467	210.000	75.794	0.000	0.000	0.000	0.000	24,085.499
4874 PRTVII Aircraft Acquisition	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,580.580

(U) A. Mission Description and Budget Item Justification

The F/A-22 is designed to penetrate enemy airspace and achieve a first look, first kill capability against multiple targets. The F/A-22 is characterized by a low observable, highly maneuverable airframe, advanced integrated avionics, and aerodynamic performance that allows supersonic cruise without the use of afterburner. The F/A-22 is currently in the Engineering and Manufacturing Development (EMD) phase of acquisition. The Defense Acquisition Board (DAB) approved Low Rate Initial Production (LRIP) Aug 01.

This program is in Budget Activity 5, System Development and Demonstration, because the F/A-22 Program is developing the next-generation air dominance fighter for the USAF to counter emerging worldwide threats.

(U) B. Program Change Summary (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Previous President's Budget	839.635	620.740	210.000
(U) Current PBR/President's Budget	843.999	615.467	210.000
(U) Total Adjustments	4.364	-5.273	
(U) Congressional Program Reductions			
Congressional Rescissions		-5.273	
Congressional Increases			
Reprogrammings	4.364		
SBIR/STTR Transfer			
(U) <u>Significant Program Changes:</u>			
None			

Exhibit R-2a, RDT&E Project Justification

DATE

February 2004

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604239F F-22 EMD			PROJECT NUMBER AND TITLE 4069 Advanced Tactical Fighter FSD		
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
4069 Advanced Tactical Fighter FSD	843.999	615.467	210.000	75.794	0.000	0.000	0.000	0.000	24,085.499
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

* Total Cost includes \$3,779,811,000 of Demonstration and Validation funding prior to FY 1992 funded in PE 0603230F.

(U) A. Mission Description and Budget Item Justification

The F/A-22 is designed to penetrate enemy airspace and achieve a first look, first kill capability against multiple targets. The F/A-22 is characterized by a low observable, highly maneuverable airframe, advanced integrated avionics, and aerodynamic performance that allows supersonic cruise without the use of afterburner. The F/A-22 is currently in the Engineering and Manufacturing Development (EMD) phase of acquisition. The Defense Acquisition Board (DAB) approved Low Rate Initial Production (LRIP) Aug 01.

The EMD phase effort includes delivery of nine flight test vehicles and two ground test vehicles (static and fatigue); delivery of 25 flight qualified engines; integration and test of the EMD avionics suite including air-to-surface provision; development and test of the F/A-22 weapons system support and training system; and updating the YF-22 Avionics Flying Laboratory with EMD assets and software to become an avionics integration Flying Test Bed (FTB).

This program is in Budget Activity 5, System Development and Demonstration, because the F/A-22 Program is developing the next-generation air dominance fighter for the USAF to counter emerging worldwide threats.

The following are representative activities of efforts being accomplished in the given fiscal year.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Air Vehicle	352.894		
- Continued full-scale airframe structural fatigue testing and analysis. (NSP)			
- Continued flight test and flight test support. (NSP)			
- Continued structural certification analysis activities. (NSP)			
(U) Avionics	286.549		
- Completed Avionics Integration Lab Block 3.1.1 Integration. (NSP)			
- Completed Block 3.1.1 FTB testing. (NSP)			
- Initiated Avionics Integration Lab Block 3.1.2 Integration. (NSP)			
- Initiated Block 3.1.2 FTB testing			
- Initiated IOT&E OFP FTB testing. (NSP)			
- Completed incorporating avionics software/hardware into the FTB. (NSP)			
- Continued DMS redesign, requalification and retesting activities. (NSP)			
(U) Engine	60.638		

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification		DATE February 2004
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604239F F-22 EMD	PROJECT NUMBER AND TITLE 4069 Advanced Tactical Fighter FSD
<ul style="list-style-type: none"> - Completed verification of engine support system products. (NSP) - Continued to support and test flight test engines. (NSP) - Completed Verification Requirements Complete (VRC) activities. (NSP) - Completed production engine configuration development testing. (NSP) - Adjusted engine support capacity at Edwards AFB consistent with IOT&E start date and flight test extension. (NSP) 		
(U) Other Government Cost		143.918
<ul style="list-style-type: none"> - Continued flight test and flight test support at Edwards AFB. - Completed aperture measurements at Rome Labs. - Completed engine testing at AEDC. - Completed live fire testing at Air Force Research Labs (AFRL). - Mission support of the SPO; travel, computer costs, misc contracts, etc. 		
(U) Air Vehicle		234.150
<ul style="list-style-type: none"> - Continue full-scale airframe structural fatigue testing and analysis. (NSP) - Continue structural certification analysis activities. (NSP) - Continue EMD flight test and flight test support. (NSP) 		
(U) Avionics		222.362
<ul style="list-style-type: none"> - Complete Avionics Integration Lab Block 3.1.2 Integration. (NSP) - Complete Block 3.1.2 FTB testing - Complete IOT&E OFP FTB testing. (NSP) - Initiate IOT&E OFP flight testing. (NSP) - Initiate Avionics Integration Lab Block 3.1.3 Integration. (NSP) - Continue DMS redesign, requalification and retesting activities. (NSP) 		
(U) Engine		24.700
<ul style="list-style-type: none"> - Continue support and test of flight test engines (25 total). (NSP) 		
(U) Other Government Cost		134.255
<ul style="list-style-type: none"> - Support flight test and flight test support at Edwards AFB. - Mission support of the SPO; travel, computer costs, misc contracts, etc. 		
(U) Air Vehicle		59.919
<ul style="list-style-type: none"> - Complete full-scale airframe structural fatigue testing and analysis. (NSP) - Continue structural certification analysis activities. (NSP) - Complete EMD flight test and flight test support. (NSP) 		
<ul style="list-style-type: none"> - Complete Avionics Integration Lab Block 3.1.3 Integration. (NSP) - Continue DMS redesign, requalification and retesting activities. (NSP) - Complete IOT&E OFP flight testing. (NSP) 		81.381
(U) Avionics		
(U) Engine		2.700

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification							DATE February 2004			
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT NUMBER AND TITLE				
05 System Development and Demonstration (SDD)			0604239F F-22 EMD			4069 Advanced Tactical Fighter FSD				
- Complete support and test of flight test engines (25 total). (NSP)										
(U)	Other Government Cost								66.000	
- Complete flight test and flight test support at Edwards AFB. - Mission support of the SPO; travel, computer costs, misc contracts, etc.										
(U)	Total Cost							843.999	615.467	210.000
(U)	<u>C. Other Program Funding Summary (\$ in Millions)</u>									
		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	PRTV II (6)									1,580.580
(U)	F/A-22 Squadrons RDT&E (PE 0207138F)	65.422	313.101	354.528	431.396	639.376	612.377	562.197	Continuing	TBD
(U)	F/A-22 Squadrons Procurement (PE 0207138F)	22.427	39.532	96.691	10.079	76.503	134.768	167.521	Continuing	TBD
(U)	Military Construction (PE 0604239F)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	39.700
(U)	Military Construction (PE 0207219F)	42.576	0.000	0.000	0.000	0.000	0.000	0.000	0.000	96.018
(U)	Military Construction (PE 0207138F)	0.000	31.164	40.246	54.460	93.324	121.991	80.075	Continuing	TBD
(U)	Aircraft Procurement (PE 0207219F) Advanced Tactical Fighter, P-1 Line Item #003**	4480.149	4109.533	4155.976	4423.214	4220.211	4090.326	3920.002	5,987.570	42,120.610
(U)	Munitions Procurement (PE 0207219F)	6.260	6.410	9.406	10.897	10.763	12.038	12.293	27.805	102.057
(U)	F/A-22 Link 16 Transmit Procurement (PE 27445F)				27.560	29.059	31.988	32.598	Continuing	TBD
(U)	F/A-22 Link 16 Transmit RDT&E (PE 27445F)	28.926	42.318	50.940	55.817	14.026	27.509	28.919	Continuing	TBD
PE 0207138F includes manpower authorizations, peculiar and common support equipment, necessary facilities and the associated costs specifically identified and measurable to the following: Operation, maintenance, and logistical support of the F/A-22 fighter ** NOTE: Includes BP 10, 11, 16, 19 and Advance Buy.										
(U)	<u>D. Acquisition Strategy</u>									
The EMD contract is Cost Plus Award Fee with Lockheed Martin Aeronautical Systems (LMAS) to produce the F/A-22 air vehicle and Pratt & Whitney (P&W) to produce the F119 engines. The engines are provided to LMAS as GFE.										
Project 4069			R-1 Shopping List - Item No. 67-4 of 67-7				Exhibit R-2a (PE 0604239F)			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis										DATE February 2004		
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604239F F-22 EMD				PROJECT NUMBER AND TITLE 4069 Advanced Tactical Fighter FSD				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2003</u> <u>Cost</u>	<u>FY</u> <u>2003</u> <u>Cost</u>	<u>FY</u> <u>2003</u> <u>Award</u> <u>Date</u>	<u>FY</u> <u>2004</u> <u>Cost</u>	<u>FY</u> <u>2004</u> <u>Award</u> <u>Date</u>	<u>FY</u> <u>2005</u> <u>Cost</u>	<u>FY</u> <u>2005</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>	<u>Target</u> <u>Value of</u> <u>Contract</u>
(U) <u>Product Development</u>												
Lockheed (Air Veh)	C/CPAF	Lockheed Martin, Marietta, GA	15,216.809	639.443	Dec-02	456.512	Dec-03	141.300	Dec-04	55.994	16,510.058	14,722.700
Pratt & Whitney	C/CPFF	Pratt & Whitney, Hartford, CT	2,403.579	60.638	Nov-02	24.700	Jan-04	2.700	Nov-04	0.900	2,492.517	2,429.300
GFE	Various		58.700	1.909		2.578		1.300		1.296	65.783	
Subtotal Product Development			17,679.088	701.990		483.790		145.300		58.190	19,068.358	17,152.000
Remarks:												
(U) <u>Support</u>												
Support Contracts	Various		16.604	1.500		1.500		1.500		1.491	22.595	
In House Support	Various		124.096	16.000		5.500		2.000		2.000	149.596	
Subtotal Support			140.700	17.500		7.000		3.500		3.491	172.191	0.000
Remarks:												
(U) <u>Test & Evaluation</u>												
AEDC	PO	Arnold AFB, TN	155.400	2.600	Nov-02					0.000	158.000	
AFFTC	PO	Edwards AFB, CA	484.118	121.042	Nov-02	124.477	Nov-03	61.200	Nov-03	14.113	804.950	
All Other Tests	Various		100.008	0.867		0.200				0.000	101.075	
Not Applicable											0.000	
Subtotal Test & Evaluation			739.526	124.509		124.677		61.200		14.113	1,064.025	0.000
Remarks:												
(U) <u>Management</u>												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			18,559.314	843.999		615.467		210.000		75.794	20,304.574	17,152.000
NOTE: Total program cost for Engineering and Manufacturing Development only. Does not include \$3,779,811,000 of Demonstration and Validation funding prior to FY92.												

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2004

BUDGET ACTIVITY

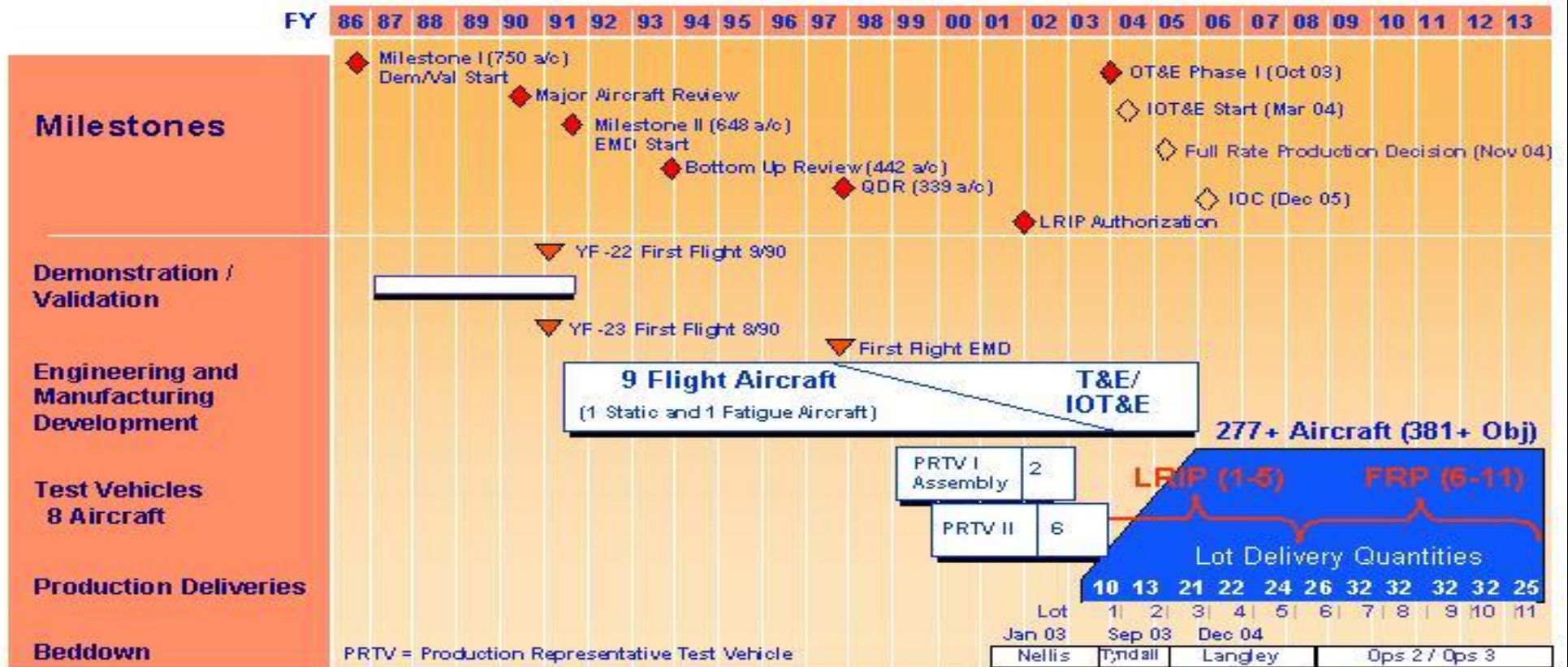
05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604239F F-22 EMD

PROJECT NUMBER AND TITLE

4069 Advanced Tactical Fighter FSD



UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2004
--	------------------------------

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604239F F-22 EMD	PROJECT NUMBER AND TITLE 4069 Advanced Tactical Fighter FSD
---	---	---

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Schedule Profile			
(U) OT&E Phase I Preparation	2Q		
(U) OT&E Phase I Start		1Q	
(U) OT&E Phase I Complete		2Q	
(U) IOT&E Start		2Q	
(U) IOT&E Complete			1Q