

UNCLASSIFIED

PE NUMBER: 0207134F
 PE TITLE: F-15E SQUADRONS

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2008
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0207134F F-15E SQUADRONS
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Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	134.253	114.519	184.213	278.588	179.470	119.622	122.072	Continuing	TBD
0131 Initial Operational Test and Evaluation	134.253	114.519	184.213	278.588	179.470	119.622	122.072	Continuing	TBD

FY2008 funding totals do not include \$97.5M FY2008 GWOT requirements still pending Congressional consideration.

(U) A. Mission Description and Budget Item Justification

The F-15 is the most versatile fighter in the world today. The F-15A-D continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. Configured with conformal fuel tanks (CFTs), the F-15E deploys worldwide with minimal tanker support and arrives combat-ready. A mainstay in the War on Terror both domestically and abroad, upgrades to the F-15 (avionics, armament, airframe, and engines) are critical to maintaining combat viability (lethality, survivability, and supportability).

Projected to remain in service past 2030, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical studies (both internal to the Air Force and through outside contractors), forestalling obsolescence, exploiting proven technological advances, and leveraging new technology. Major avionics upgrades center around radar modernization (both hardware and software upgrades) and the exploitation of enhanced capability via wideband radome, precision timing, data delivery and processing technology, precision registration systems, cockpit Head Up Display (HUD) and instrumentation digitization and modernization, central computer processing power increases, and digital mission event recording systems.

The proliferation of fourth generation enemy aircraft and sophisticated "double-digit" anti-aircraft missile systems pose a significant threat to F-15 survivability. A fully integrated electronic warfare suite holds the promise of providing survivability as well as expanded electronic attack capability.

Nearly all improvements are linked to an aircraft operational flight program update schedule that works to integrate new capabilities with the airframe. These updates are a responsive way to increase the offensive and defensive capability and survivability of the F-15. Given the comprehensiveness of these changes, significant flight test will be required. Incorporation of corresponding spiral and/or phased technology/equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability, and LRU throughput.

The F-15E program, PE 0207134F, is assigned budget activity (BA) code 07 because this developmental work upgrades an existing weapons system.

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BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207134F F-15E SQUADRONS

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

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	137.541	101.251	186.386
(U) Current PBR/President's Budget	134.253	114.519	184.213
(U) Total Adjustments	-3.288	13.268	
(U) Congressional Program Reductions			
Congressional Rescissions		-0.732	
Congressional Increases		14.000	
Reprogrammings	0.500		
SBIR/STTR Transfer	-3.788		
(U) <u>Significant Program Changes:</u>			
Funding (FY 08):			
FY 08 Congressional increase from FY 08 PB to FY 09 PB in support of AESA Demonstration - \$6.0M			
FY 08 Congressional increase from FY 08 PB to FY 09 PB in support of RWR Upgrade - \$5.6M			
FY 08 Congressional increase from FY 08 PB to FY 09 PB in support of F-15 classified projects - \$2.4M			

Exhibit R-2a, RDT&E Project Justification

DATE

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BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT NUMBER AND TITLE			
07 Operational System Development				0207134F F-15E SQUADRONS			0131 Initial Operational Test and Evaluation			
Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total	
0131 Initial Operational Test and Evaluation	134.253	114.519	184.213	278.588	179.470	119.622	122.072	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0			

(U) **A. Mission Description and Budget Item Justification**

The F-15 is the most versatile fighter in the world today. The F-15A-D continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. Configured with conformal fuel tanks (CFTs), the F-15E deploys worldwide with minimal tanker support and arrives combat-ready. A mainstay in the War on Terror both domestically and abroad, upgrades to the F-15 (avionics, armament, airframe, and engines) are critical to maintaining combat viability (lethality, survivability, and supportability).

Projected to remain in service past 2030, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical studies (both internal to the Air Force and through outside contractors), forestalling obsolescence, exploiting proven technological advances, and leveraging new technology. Major avionics upgrades center around radar modernization (both hardware and software upgrades) and the exploitation of enhanced capability via wideband radome, precision timing, data delivery and processing technology, precision registration systems, cockpit Head Up Display (HUD) and instrumentation digitization and modernization, central computer processing power increases, and digital mission event recording systems.

The proliferation of fourth generation enemy aircraft and sophisticated "double-digit" anti-aircraft missile systems pose a significant threat to F-15 survivability. A fully integrated electronic warfare suite holds the promise of providing survivability as well as expanded electronic attack capability.

Nearly all improvements are linked to an aircraft operational flight program update schedule that works to integrate new capabilities with the airframe. These updates are a responsive way to increase the offensive and defensive capability and survivability of the F-15. Given the comprehensiveness of these changes, significant flight test will be required. Incorporation of corresponding spiral and/or phased technology/equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability, and LRU throughput.

The F-15E program, PE 0207134F, is assigned budget activity (BA) code 07 because this developmental work upgrades an existing weapons system.

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

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Operational Flight Program (OFP) development efforts.	77.204	60.429	79.120
(U) Flight testing of improvements initiated in prior years.	17.701	10.537	19.668
(U) Development of Tactical Electronic Warfare System (TEWS) Intermediate Support System (TISS) Technology Insertion Program (TTIP)	1.943	2.604	2.390
(U) Mode 5 Development Efforts	12.123	11.669	4.268
(U) F-15C/D APG-63(V)3 Radar Block Upgrade	13.455	8.400	
(U) F-15E Radar Modernization Program (RMP)	4.353	9.470	76.467
(U) F-15 ACU (NCI / ICCP) development efforts	6.050		
(U) F-15 RWR Upgrade		5.600	

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Exhibit R-2a (PE 0207134F)

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Exhibit R-2a, RDT&E Project Justification	DATE February 2008
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0207134F F-15E SQUADRONS	PROJECT NUMBER AND TITLE 0131 Initial Operational Test and Evaluation
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(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Mission Support, Other Government Cost	1.424	5.810	2.300
(U) Total Cost	134.253	114.519	184.213

(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</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) Other APPN:									
(U) Aircraft Procurement (3010F), F-15E (PE 0207134F) [BP 10]									
(U) Total BP 10									
(U) Aircraft Procurement (3010F), F-15A-E (PEs 0207130F and 0207134F) [BP 11]	243.644	58.735	12.326	128.475	278.961	306.326	147.185	Continuing	TBD
(U) Aircraft Procurement (3010F) F-15E (PE 0809731F) Training Support to Units [BP11]	1.301							Continuing	TBD
(U) Aircraft Procurement (3010F) F-15E (PE 0207445F) Fighter Tactical Data Link [BP11]	32.055								32.055
(U) Total BP 11	277.000	58.735	12.326	128.475	278.961	306.326	147.185		
(U) Aircraft Replacement (3010F) F-15E (PEs 0207130F and 0207134F) Support Equipment [BP 12]	15.331	11.473	13.201	12.999	5.088	5.188	5.290	Continuing	TBD
(U) Total BP 12	15.331	11.473	13.201	12.999	5.088	5.188	5.290		
(U) Aircraft Procurement (3010F), F-15A-E (PE 0207134F) [BP 13]	10.698	5.577	20.189	16.028	22.214	2.674	2.726	Continuing	TBD
(U) Total BP 13	10.698	5.577	20.189	16.028	22.214	2.674	2.726		

(U) **D. Acquisition Strategy**
 Program is a continuation of effort which includes the development of all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test.

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Exhibit R-3, RDT&E Project Cost Analysis

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(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2007 Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) <u>Product Development</u>												
OFP Suite 4/5/6/7/8 Development and Test	CPAF	Boeing, St Louis		77.204	Dec-06	60.429	Dec-07	79.120	Dec-08	Continuing	TBD	
TISS TTIP	CPFF	Boeing, St. Louis		1.943	Dec-06	2.604	Jan-08	2.390	Dec-08	3.200	10.137	
F-15C/D APG-63(V)3 Radar Block Upgrade	CPFF	Boeing, St Louis		13.455	Sep-07	8.400	Mar-08			0.000	21.855	
F-15E RMP	CPFF	Boeing, St Louis		4.353	Jan-07	9.470	Jul-08	76.467	Oct-08	297.850	388.140	
Mode 5	CPAF	Boeing, St. Louis		12.123	Dec-06	11.669	Dec-07	4.268	Dec-08	0.000	28.060	
F-15 RWR Upgrade	CPFF	Boeing St. Louis				5.600	Oct-08				5.600	
F-15 ACU (NCI / ICCP) Development Efforts	CPFF	Boeing St. Louis		6.050	Feb-08					0.000	6.050	
Subtotal Product Development			0.000	115.128		98.172		162.245		Continuing	TBD	0.000
Remarks:												
(U) <u>Support</u>												
(Msn Spt) Misc.		Wright-Patters on AFB, OH		1.424		5.810		2.300		Continuing	TBD	
Subtotal Support			0.000	1.424		5.810		2.300		Continuing	TBD	0.000
Remarks:												
(U) <u>Test & Evaluation</u>												
Boeing (Contractor Test Team)	CPFF	Boeing, St Louis		12.984	Dec-06	8.837	Dec-07	13.538	Dec-08	Continuing	TBD	
Edwards	PO	Edwards AFB, CA		0.030	Apr-07	0.000		0.030	Apr-09	Continuing	TBD	
Eglin (Flt Test)	PO	Eglin AFB, FL		4.687	Jun-07	1.700	Jun-08	6.100	Jun-09	Continuing	TBD	
Subtotal Test & Evaluation			0.000	17.701		10.537		19.668		Continuing	TBD	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			0.000	134.253		114.519		184.213		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0207134F F-15E SQUADRONS

PROJECT NUMBER AND TITLE
0131 Initial Operational Test and Evaluation



F-15E Modifications



U.S. AIR FORCE

Dominant Air Power: Design For Tomorrow... Deliver Today

Program	Prior	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	Quantity
PACS-46		31	3 2						224
Exp 1760	120	46	8 8 7 4	5					198
ADCP	24	66	20 20 24 18	52					224
OFP Suite 5 / 6 / 7		S5		S6		S7			NA
DVR Blue Suite S5 - ModS5 / S6			40 40 41		40/24	41/40	40/39		224
VHF Antenna	46	160	9 9						224
VHF 1553				135	89				224
IFF / AAI	24	63	21 23 25 24	44					224
Mode 5 IFF Retrofit						80	80	64	224
F-15E RMP (AESA Radar)						5-DT/OT			224
NVIS Phase II			50 75 75	24					224
TISS TIP		29	3			20	14		34
JHMCS - Front Seat			2 2 2 2	145					153
BLOS/SLOS SATCOM									
		Development		Production		Installation		Unfunded	

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Exhibit R-4, RDT&E Schedule Profile

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PE NUMBER AND TITLE
0207134F F-15E SQUADRONS

PROJECT NUMBER AND TITLE
0131 Initial Operational Test and Evaluation



U.S. AIR FORCE

F-15A-D Modifications



Dominant Air Power: Design For Tomorrow... Deliver Today

Program	Prior	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	Quantity
Fighter Data Link		31	8 9						32+16T
JHMCS	160	39	3 2 3 6						181+32
EGI	136	33	8 12 18 14 11						178+54
Radar Imp Pgm (V)3				13	8	2	11	12	41+14
VHF Antenna	74	178	27 30 30 20						179+54T+126
VHF 1553				14	120	98			232
IFF / AAI	3	110	29 21 28 38	88					178+20T+119
Mode 5 IFF Retrofit					60	144	99		177+126
NVIS Phase II			88 89						177
OFP Suite 5 / 6 / 7		S5		S6			S7		NA
Avionics Control Unit					65	100	66		177+54T
DVR					36	80	80	35	177+54T
ESTS	62								62
VHSIC+				65	134	32			177+54T
		Development		Production		Installation		Unfunded	AD+Training+ANG

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Exhibit R-4 (PE 0207134F)

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Exhibit R-4a, RDT&E Schedule Detail

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(U) Schedule Profile	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) OFP Suite 5MSIP Flight Test - Complete	1Q		
(U) OFP Suite 5E Fielding	1Q		
(U) OFP Suite 5MSIP Fielding	2Q		
(U) OFP Suite 6 Phase II - Complete			4Q
(U) OFP Suite 6 Phase II Flight Test - Start		1Q	
(U) OFP Suite 6 Phase II Flight Test - Complete			3Q
(U) Mode 5 - Complete			4Q
(U) ACU (NCI / ICCP) - Start	3Q		
(U) ACU (NCI / ICCP) - Complete			4Q
(U) F-15 E SDD (EMD radar orders) - Start			1Q
(U) F-15 RMP SDD - Start		4Q	
(U) F-15 C/D (V)3 Radar Block Upgrade Flight Test - Complete	1Q		
(U) TISS System Compatibility Test - Complete	1Q		
(U) RWR - Lab Test - Complete	3Q		
(U) OFP Suite 7 Phase 1 / Phase II - Start		2Q	2Q