

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

June 2001

BUDGET ACTIVITY

PE NUMBER AND TITLE

07 - Operational System Development**0401130F C-17 Aircraft**

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	153,252	174,821	110,619	108,434	110,734	113,023	110,149	111,283	0	7,012,614
2569 C-17 Aircraft	153,252	129,938	110,619	108,434	110,734	113,023	110,149	111,283	0	6,967,731
4886 Large Aircraft Infrared Counter Measures (LAIRCM)	0	44,883	0	0	0	0	0	0	0	44,883
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**

Airlift provides a major element of America's national security strategy and constitutes the most responsive means of meeting U.S. mobility requirements. The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. The load options include troops and/or outsized/oversized/palletized cargo. The C-17 is designed to provide direct delivery of those cargo loads to austere airfields, as close as possible to the user's specified final destination. The C-17 will also use standard airfields and delivery modes. The C-17 is specifically designed to provide U.S. combat forces maximum flexibility in the selection of landing sites and support of ground forces after landing. Consequently the C-17 will land with up to 160,000 lbs payload on austere runways as small as 3,000 feet by 90 feet. The Large Aircraft Infrared Countermeasures System (LAIRCM) will provide transport and tanker aircraft an effective, active defense against shoulder-launched IR missiles.

(U) **B. Budget Activity Justification**

This program is budget activity 7, Operational System Development, because the program has completed Milestone III and is continuing producibility and performance improvements to support full-rate production and increase the operational capability of the C-17 through programmed modifications.

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0401130F C-17 Aircraft(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	159,019	176,439	139,443	6,845,199
(U) Appropriated Value	160,918	176,439		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-1,026	0		
b. Small Business Innovative Research	-4,651			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-1,360			
e. Rescissions	-629	-1,618		
(U) Adjustments to Budget Years Since FY 2001 PBR			-28,824	167,415
(U) Current Budget Submit/FY 2002 PBR	153,252	174,821	110,619	7,007,900

(U) **Significant Program Changes:**

A second project, 674886, was added to the C-17 Program Element for the Large Aircraft Infrared Countermeasures (LAIRCM). FY01 remains as appropriated. All FY 02 and later funds for LAIRCM were ZBT'ed to PE 41134F (\$29.446M in FY02).

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0401130F C-17 Aircraft

PROJECT

2569

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2569 C-17 Aircraft	153,252	129,938	110,619	108,434	110,734	113,023	110,149	111,283	0	6,962,919

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**

Airlift provides essential flexibility when responding to contingencies on short notice anywhere in the world. It is a major element of America's national security strategy and constitutes the most responsive means of meeting U.S. mobility requirements. Additional airlift capability is needed for rapid deployment of combat forces in support of national objectives. Specific tasks associated with the airlift mission include deployment, employment (airland and airdrop), sustaining support, retrograde, and combat redeployment. The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. The C-17 provides a vast increase in overall airlift capability necessary to replace and exceed the capabilities lost from retiring the aging C-141 fleet from the Air Force inventory. Not only can the C-17 deliver outsize cargo to austere tactical environments, but it also reduces ground time during airland operations. The C-17 will perform the airlift mission well into this century. RDT&E efforts support producibility enhancements and performance improvements, including correction of Operational Test & Evaluation (OT&E) deficiencies.

(U) **FY 2000 (\$ in Thousands)**

(U)	\$98,058	Performance Improvement Development & Testing
(U)	\$28,755	Systems Engineering / Program Management
(U)	\$15,394	Contractor System Test & Evaluation
(U)	\$11,045	Producibility Enhancement / Performance Improvement (PE/PI) Government Flight Test
(U)	\$153,252	Total

(U) **FY 2001 (\$ in Thousands)**

(U)	\$73,616	Performance Improvement Development & Testing
(U)	\$29,080	Systems Engineering / Program Management
(U)	\$16,242	Contractor System Test & Evaluation
(U)	\$11,000	Producibility Enhancement / Performance Improvement (PE/PI) Government Flight Test
(U)	\$129,938	Total

The following transactions are not reflected in the FY01 program total: SBIR, -\$4,961K and a -\$1,850K BTR. These transactions are not reflected in other sections of the R-Docs where FY01 totals are shown.

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Exhibit R-2A (PE 0401130F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0401130F C-17 Aircraft

PROJECT

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(U) **A. Mission Description Continued**(U) **FY 2002 (\$ in Thousands)**

(U)	\$55,071	Performance Improvement Development & Testing
(U)	\$30,400	Systems Engineering / Program Management
(U)	\$15,148	Contractor System Test & Evaluation
(U)	\$10,000	Producibility Enhancement / Performance Improvement (PE/PI) Government Flight Test
(U)	\$110,619	Total

(U) **B. Project Change Summary**(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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>Estimate</u>	<u>Complete</u>	
(U) APAF, MYP, BA02, PE0401130F	2,982,951	2,423,380	3,081,375	2,588,899	1,214,146	1,933,331	7,680	7,689		14,239,451
(U) APAF, ICS, PE0401130F	396,600	411,293	463,663	444,316	308,197	328,160	368,983	355,697		3,076,909
(U) APAF, A/C Mods, BA05, PE0401130F	78,789	96,236	105,908	114,938	182,043	250,466	251,051	269,093		1,348,524
(U) MilCon, Facilities, PE0401130F	26,100	15,689	41,450	0	0	0				83,239
(U) Construction (Planning and Design), PE091211F			1,150							1,150

(U) **D. Acquisition Strategy**

The C-17 Acquisition Strategy is based on five separate contracts to support the entire scope of the C-17 weapon system. These five contracts are: 1) a multi-year procurement (MYP) aircraft contract (to economically purchase the full complement of production aircraft) - (APAF); 2) a Producibility Enhancement and Performance Improvement (PE/PI) contract (to develop cost reduction changes, capability enhancements, and design fixes to service-revealed problems) - (RDT&E, APAF); 3) a Flexible Sustainment (field support) contract (to support the current and future fielded aircraft) - (APAF); 4) a MYP engine contract (for Government Furnished Equipment [GFE] engines) - (APAF); and 5) a set of simulator and training contracts: two aircrew training systems (ATS) contracts (for aircrew simulators, training & concurrency upgrades), and a maintenance training device contract (for devices & concurrency upgrades of same) - (APAF).

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DATE

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0401130F C-17 Aircraft

PROJECT

2569

(U) **D. Acquisition Strategy Continued**

The Congressionally-mandated Mobility Requirements Study (MRS), initially forwarded to Congress on 23 Jan 92 and updated on 28 Mar 95, validated the need for the C-17 aircraft. Two C-17 Defense Acquisition Board (DAB) decisions, contained in the 3 Nov 95 and 1 Feb 96 USD(A&T) Acquisition Decision Memoranda (ADMs), directed the Air Force to proceed with a 120-aircraft production program and pursue a multi-year procurement for the last 80 aircraft. The FY96 Supplemental Appropriations Act and FY97 Defense Appropriations Act approved a 7-year MYP program. The Air Force is proceeding with an 80-aircraft MYP program (along with engines to support them) to complete a 120-aircraft total purchase at the maximum affordable rate (FY97-03 Quantity: 8-9-13-15-12-15-8), beginning with the economic order quantity (EOQ) funding in FY96. Seventeen additional C-17s have been programmed at the end of the 80-aircraft MYP (FY03 +4, FY04 +5, FY05 +8) to replace Air Mobility Command's (AMC's) C-141 Special Operations Low Level (SOLL) II aircraft and meet requirements not included in the 120 aircraft program. The adjusted program is: FY03,12; FY04, 5; FY05, 8.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Incremental Funding of Ongoing Performance Improvement Projects (FY00)	*											
(U) GATM - HF Data Link RNP-4 - 1st Year Award (FY00)		*										
(U) Communication Open System Architecture - 1st Year Award (FY00)			*									
(U) Incremental Funding of Ongoing Performance Improvement Projects (FY01)					*							
(U) Incremental Funding of Ongoing Performance Improvement Projects (FY02)									X			
(U) Software Block 14 - 1st Year Award (FY02)											X	
(U) Stab Struts Phase 1 - 1st Year Award (FY02)											X	
* = completed event - contract obligation												
X = planned event - contract obligation												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development					0401130F C-17 Aircraft				2569		
(U) A. Project Cost Breakdown (\$ in Thousands)											
					FY 2000	FY 2001	FY 2002				
(U) Contractor Furnished Engineering & Test					142,092	118,817	100,492				
(U) Government Test & Other Government Costs (OGC)					11,160	11,121	10,127				
(U) Total					153,252	129,938	110,619				
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
Contractor or Government		Contract Method/Type	Award or Obligation	Performing Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total
Performing Activity		or Funding Vehicle	Date	EAC	EAC	to FY 2000	FY 2000	FY 2001	FY 2002	Complete	Program
Product Development Organizations											
Boeing		C,FPI/FP	8/31/81	5,190,366	5,190,366	5,190,366				0	5,190,366
Boeing		C,CPFF	7/13/95	1,025,425	1,025,425	341,394	142,092	118,817	100,392	511,723	1,214,418
Pratt & Whitney		C,FP	5/24/91	25,346	25,346	25,346				0	25,346
Boeing		C,FPI	4/14/89	83,885	83,885	83,885				0	83,885
Pratt & Whitney		FP+EPA	4/18/95	8,306	8,306	7,506			100	200	7,806
Support and Management Organizations											
Mission Support OGC		PO				97,500	115	121	127	420	98,283
Site Activation OGC		PO				1,539				0	1,539
Miscellaneous						22,400				0	22,400
Test and Evaluation Organizations											
Combined Test Force		PO				237,200	11,045	11,000	10,000	36,349	305,594
Wright Labs/Arnold Eng		PO				10,252				0	10,252
Dev Center											
Other		PO				3,030				0	3,030

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Exhibit R-3 (PE 0401130F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

June 2001

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0401130F C-17 Aircraft

PROJECT

4886

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4886 Large Aircraft Infrared Counter Measures (LAIRCM)	0	44,883	0	0	0	0	0	0	0	44,883

Note: FY03-07 budget numbers do not reflect the DoD strategic review results.

(U) A. Mission Description

The Large Aircraft Infrared Countermeasures (LAIRCM) Program will provide advanced defensive capability for transport and tanker aircraft against Man-Portable Air Defense Systems (MANPADSs) (shoulder-launched IR missiles). The LAIRCM system is significantly more effective than flares, and requires no user intervention after it is activated. Installation of LAIRCM will increase the survivability of transport and tanker aircraft when operating in MANPADS threat areas.

The system consists of advanced integrated missile warning systems, processors, multi-band laser jammers and fine-track sensors. The lasers and fine-track sensors are mounted on turrets. Initial installation is planned on C-17s in late FY03/early FY04. Funding has been provided for 12 C-17s and 8 C-130s. RDT&E funds will be used for non-recurring engineering (NRE) and integration test and evaluation.

Funds for LAIRCM were originally put in the affected aircraft PEs (41130F for C-17s and 41115F for C-130s). Beginning in FY02, all LAIRCM funds were ZBTed to a new LAIRCM PE (41134F), with the exception of the FY01 C-17 RDT&E funds shown here. The total funding did not change as a result of these ZBTs. The LAIRCM program completed all required New Start notifications in the FY01 PB.

The multi-command ORD supporting this program, 'LAIRCM ORD 314-92', was validated 3 Aug 98. Future efforts will improve producibility of the subsystems and improve upon the efficiency and effectiveness of the overall system.

HQ/AMC plans like to equip an additional 59 aircraft to meet the minimum 79 aircraft needed to support One Small-Scale Contingency (1SSC).

* All FY 02 and later funds for LAIRCM were ZBT'ed to PE 41134F and are not reflected in this R-2A.

(U) FY 2000 (\$ in Thousands)**(U) \$0 No Activity****(U) \$0 Total****(U) FY 2001 (\$ in Thousands)**

(U) \$41,683

1. NRE (initial design, drawings, specifications, documentation, develop C-17 peculiar support equipment for installation, assembly processes, and parts obsolescence)
2. One kit buy
 - Group A - one prototype kit
 - Group B - one prototype kit

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401130F C-17 Aircraft			PROJECT 4886			
(U) <u>A. Mission Description Continued</u>										
(U) <u>FY 2001 (\$ in Thousands) Continued</u>										
3. Software development (for sensor and aircraft integration)										
(U) \$3,200 Program Office Support (TDY, training, supplies, and CETA contract support)										
(U) \$44,883 Total										
(U) <u>FY 2002 (\$ in Thousands)</u>										
(U) \$0 All funding ZBTed to PE 41134F. See that PE for details.										
(U) \$0 Total										
(U) <u>B. Project Change Summary</u>										
LAIRCM funding for FY 02 and later has been ZBT'ed to PE 41134F. See that PE for details.										
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) PE 41134F, LAIRCM										
			62,164	20,118	13,270				0	95,552
RDT&E										
(U) Other APPN										
(U) PE 41134F, C-17 LAIRCM										
			33,370	51,566	51,135	6,258	6,265		0	148,594
Procurement, BP-1100										
(U) PE 41134F, C-130 LAIRCM										
				33,705	47,202	6,065	7,882		0	94,854
Procurement, BP 1100										
* Note: FY 02 and later LAIRCM funds were ZBT'ed from this PE to 41134F. See that PE for details.										
(U) <u>D. Acquisition Strategy</u>										
LAIRCM system integration and acquisition will be overseen by the LAIRCM System Program Office (ASC/AI). Their winning contractor will integrate the LAIRCM subsystems. Integration and installation of the LAIRCM system will be performed by Boeing for the C-17, since it's still in production. C-130 installation is TBD.										
(U) <u>E. Schedule Profile</u>										
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development					0401130F C-17 Aircraft				4886		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Performance Development/System Engineering					0		41,683		0	
(U)	Program Management					0		3,200		0	
(U)	Total					0		44,883		0	
Funding for FY 02 and later has been ZBT'ed to PE 41134F. See that PE for details.											
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
	<u>Contractor or</u>	<u>Contract</u>									
	<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
	<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Total</u>	
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
	Group B Integrator - TBD	CPAF (EMD)	FY01/4					35,183		35,183	
	Group A Installation - Boeing	CPAF (EMD)	FY01/4					6,500		6,500	
* Note: Funding for FY 02 and later can be found in PE 41134F. See that PE for details.											
<u>Support and Management Organizations</u>											
	SPO	N/A	N/A					3,200		3,200	
* Note: Funding for FY 02 and later can be found in PE 41134F. See that PE for details.											
<u>Test and Evaluation Organizations</u>											
	Current C-17 Test team	N/A	N/A								
member organizations											
* Note: Funding for FY 02 and later can be found in PE 41134F. See that PE for details.											
(U) <u>Government Furnished Property:</u>											
		<u>Contract</u>									
		<u>Method/Type</u>	<u>Award or</u>								
	<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Total</u>	
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Program</u>	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401130F C-17 Aircraft			PROJECT 4886		
(U) <u>Government Furnished Property Continued:</u>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
TBD									
<u>Support and Management Property</u>									
TBD									
<u>Test and Evaluation Property</u>									
TBD									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						41,683			41,683
Subtotal Support and Management						3,200			3,200
Subtotal Test and Evaluation									
Total Project						44,883			44,883

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