

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2000</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401115F C-130 AIRLIFT SQUADRONS</b>
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COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	40,123	60,496	112,976	130,937	105,577	87,659	Continuing	TBD
674726 Avionics Modernization Program (AMP)	0	40,123	60,496	80,252	122,314	100,129	87,659	Continuing	TBD
674885 Large Aircraft Infrared Counter Measures (LAIRCM)	0	0	0	32,724	8,623	5,448	0	0	46,795
Quantity of RDT&E Articles	0	0	0	0	1	2	0	0	0

**(U) A. Mission Description**

The C-130 Avionics Modernization Program (AMP) consolidates and installs the mandated DOD Navigation/Safety mods, the Global Air Traffic Management (GATM) systems and the C-130 Broad Area Review requirements. These mandated mods are incorporated with various other Reliability, Maintainability, and Sustainability (RM&S) upgrades. AMP modernization will improve C-130 reliability, and will give the C-130 fleet complete access to international air space. The Large Aircraft Infrared Countermeasures System (LAIRCM) will provide advanced defensive capability against IR Man-Portable Air Defense Systems (MANPADS) for large transport and tanker aircraft. LAIRCM is significantly more effective than today's traditional employment of flares. LAIRCM consists of two advanced integrated missile warning systems and an active laser countermeasures system.

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

These programs are a budget activity 7 - Operational System Development because they provide funding for the modernization of a currently existing and operating system.

**(U) C. Program Change Summary (\$ in Thousands)**

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2000 PBR)		0	0	46,795
(U) Appropriated Value		40,600		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram			-220	
d. Below Threshold Reprogram				

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

DATE

February 2000

BUDGET ACTIVITY

PE NUMBER AND TITLE

**07 - Operational System Development**

**0401115F C-130 AIRLIFT SQUADRONS**

(U) C. Program Change Summary (\$ in Thousands) Continued

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
e. Rescissions		-257		
f. Other				
(U) Adjustments to Budget Years Since FY 2000 PBR			60,496	
(U) Current Budget Submit/FY 2001 PBR		40,123	60,496	46,795

(U) Significant Program Changes:

Congress approved the AF's request to reprogram FY00's \$38.6 million and FY01's \$61.0 million to RDT&E from the Aircraft Procurement account. Congress also added \$2 million to this program in FY00 for an AC-130 Leading Edge Technology program.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2000</b>	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0401115F C-130 AIRLIFT SQUADRONS</b>				<b>PROJECT</b> <b>674726</b>	
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674726 Avionics Modernization Program (AMP)	0	40,123	60,496	80,252	122,314	100,129	87,659	Continuing	TBD
<p><b>(U) A. Mission Description</b></p> <p>The C-130 Avionics Modernization Program (AMP) consolidates and installs the mandated DOD Navigation/Safety mods, the Global Air Traffic Management (GATM) systems and the C-130 Broad Area Review requirements. These mandated mods are incorporated with various other Reliability, Maintainability, and Sustainability (RM&amp;S) upgrades to include: TCAS, TAWS, replace APN-59 and APQ-175 radars, replace N-1/C-12 compass, provide dual autopilots, install dual flight management systems and provide HF/UHF/VHF datalink. AMP modernization will give the C-130 fleet complete access to international air space.</p> <p>The USAF C-130 fleet consists of 15 different mission design series (MDS) to be modified by the Avionics Modernization Program (AMP). Some of these MDSs have multiple variants within each which result in a total of 20 C-130 variants to be modified by AMP. These multiple different models and cockpit configurations result in significant support and training inefficiencies. Also, these differences greatly complicate unit/aircraft interoperability at forward locations. The AMP program standardizes the cockpit configurations and avionics for these 20 different variants by installing a single core avionics package and cockpit configuration, thus eliminating the fleet's significant interoperability and training problems. (Note: the C-130J MDSs are not affected by AMP). Today, the maintainability and supportability costs for these 20 different variants are increasing at a rate greater than inflation. AMP will modernize these aircraft with new avionics suites and other cockpit equipment to bring costs down and improve aircrew interoperability.</p> <p>The baseline program (described here) modifies the first seven variants of the C-130 fleet for a total of 397 aircraft. The planned FY02 POM follow-on program will fund and complete AMP for the remaining 122 aircraft (13 variants in eight different C-130 MDSs). Each variant or group of variants will require a specific kit development and test, then will proceed through development and production serially. During FY02-FY06, these first seven variants will be in some stage of development. Some will be in the design phase, while others will be in trial installation, testing, kit proof, or production phases. This waterfall approach will result in an orderly sequencing of development and production for the many different kits required for the C-130 fleet. The early kits will be the 'core' kits upon which kits for the more complicated aircraft will be developed. Lessons learned from the early variants will be applied to subsequent variants to reduce program risk and cost. In addition, an AF fleet-wide training system will be developed.</p> <p>Note: The C-130 Avionics Modernization Program (AMP) was initially a consolidation of a number of ongoing and planned mods which was funded in FY99 and throughout the FYDP with 3010 appropriations. In the summer of 99, the scope of the AMP program changed and became more complex, thus requiring RDT&amp;E funding. The FY 99 Omnibus requested a \$1.654 million RDT&amp;E reprogramming to begin AMP. The Omnibus was approved, but the FY 00 Appropriations Act rescinded the FY 98 and FY 99 funds (\$1.8M and \$2.7M respectively). However, Congress did approve the AF's request to reprogram FY00's \$38.6 million to RDT&amp;E from the procurement account. Congress also added \$2M to this program for an AC-130 Leading Edge Technology program.</p>									
Project 674726			Page 3 of 10 Pages				Exhibit R-2A (PE 0401115F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2000</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401115F C-130 AIRLIFT SQUADRONS</b>			PROJECT <b>674726</b>		
<b>(U) <u>A. Mission Description Continued</u></b>									
<b>(U) <u>FY 1999 (\$ in Thousands)</u></b>									
<b>(U) \$0</b> No activity									
<b>(U) \$0</b> Total									
<b>(U) <u>FY 2000 (\$ in Thousands)</u></b>									
<b>(U) \$32,000</b> Begins design and software development for AMP. This includes beginning detailed group A & B design series, hardware/software development of crew station modules/computer simulation, initiate design of system integration lab (SIL), development of training system, and continue CAAP Risk Mitigation flight testing.									
<b>(U) \$6,123</b> Program office support (A&AS, SPO, TDY, training and supplies).									
<b>(U) \$2,000</b> AC-130 Leading Edge Technology program (Congressional insertion)									
<b>(U) \$40,123</b> Total									
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>									
<b>(U) \$52,996</b> Award EMD contract. Continue design and software development. This includes beginning detailed group A & B design series, hardware/software development of crew station modules/computer simulation, initiate design of system integration lab (SIL), development of training system, and continue CAAP Risk Mitigation flight testing.									
<b>(U) \$7,500</b> Program office support (A&AS, SPO, TDY, training and supplies).									
<b>(U) \$60,496</b> Total									
<b>(U) <u>B. Project Change Summary</u></b>									
This program is budget activity 7, Operational System Development, to support full-rate production and improve the operational capability of the C-130 fleet through operational modifications.									
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 1999</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>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>	
<b>(U) AF RDT&amp;E</b>	0	0	2,000	0	0	0	0	0	2,000
<b>(U) Other APPN</b>									
<b>(U) PE 41115F, AMP, BP1100</b>					36,000	80,800	187,600	Continuing	Continuing
<b>(U) <u>D. Acquisition Strategy</u></b>									
The EMD contract will be a competitively-awarded Cost Plus Award Fee to develop AMP kits for the first seven variants within the AF C-130 fleet.									
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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2000</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0401115F C-130 AIRLIFT SQUADRONS</b>	PROJECT <b>674726</b>
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(U) **E. Schedule Profile**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) C-130 AMP Contract Award									X			
(U) C-130 Systems Requirements Review									X			
(U) C-130 Preliminary Design Review										X		
(U) C-130 CAAP PDR											X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401115F C-130 AIRLIFT SQUADRONS				PROJECT 674726			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
					<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>		
(U)	C-130 AMP EMD				0		32,000		52,996		
(U)	Program Office Support				0		6,123		7,500		
(U)	AC-130 Leading Edge funding				0		2,000		0		
(U)	Total				0		40,123		60,496		
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Prime Contractor	CPAF	FY01/01			0	0	32,000	52,996	Continuing	TBD
	Prime Contractor (AC-130)	CPAF	FY01/01					2,000	0	0	2,000
<u>Support and Management Organizations</u>											
	Program Support Office					0	0	6,123	7,500	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	TBD							0	0	Continuing	TBD
(U) <b><u>Government Furnished Property:</u></b>											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
	N/A					0	0	0	0	Continuing	TBD
<u>Support and Management Property</u>											
	N/A					0	0	0	0	Continuing	TBD

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>	DATE <b>February 2000</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0401115F C-130 AIRLIFT SQUADRONS</b>	PROJECT <b>674726</b>
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<b>(U) <u>Government Furnished Property Continued:</u></b>						
<u>Test and Evaluation Property</u>						
TBD	0	0	0	0	Continuing	TBD
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	34,000	52,996	TBD	TBD
Subtotal Support and Management	0	0	6,123	7,500	TBD	TBD
Subtotal Test and Evaluation	0	0	0	0	TBD	TBD
Total Project	0	0	40,123	60,496	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2000</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401115F C-130 AIRLIFT SQUADRONS</b>				PROJECT <b>674885</b>	
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674885    Large Aircraft Infrared Counter Measures (LAIRCM)	0	0	0	32,724	8,623	5,448	0	0	46,795
<p>(U) <b><u>A. Mission Description</u></b></p> <p>The Large Aircraft Infrared Countermeasures System (LAIRCM) will provide advanced defensive capability against IR Man-Portable Air Defense Systems (MANPADS) for large transport and tanker aircraft. LAIRCM is significantly more effective than today's traditional employment of flares. It will require no operator intervention after the system is activated. LAIRCM consists of two advanced integrated missile warning systems and an active laser countermeasures system. There is a multi-service Operational Requirements Document (ORD) -- LAIRCM ORD 314-92, validated on 3 Aug 98.</p> <p>LAIRCM will first be deployed on a small number of C-17 and C-130 aircraft. KC-135s are the next aircraft in the planned follow-on group. FY01 is the first year for C-17 LAIRCM funding. FY02 is the first year for C-130 funding. LAIRCM is divided into two phases. The first phase equips 20 aircraft (12 C-17s and 8 C-130s). Phase II will modify an additional 59 aircraft. Funding and kit procurement for Phase II is planned to begin in FY05.</p> <p>Installation of this system will increase the survivability of strategic aircraft when operating in areas with IR MANPADS threats. The C-17 will be first to receive LAIRCM, the first C-17 mod will be completed in FY03. Since this system will integrate existing subsystems, initial deployment should be achieved by FY03. RDT&amp;E funds will be used for non-recurring engineering (NRE) and integration test and evaluation.</p> <p>This is an FY01 NEW START program with notification made simultaneously here and in the C-17's descriptive summary.</p> <p>(U) <u>FY 1999 (\$ in Thousands)</u></p> <p>(U) \$0                      No activity</p> <p>(U) \$0                      Total</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u></p> <p>(U) \$0                      No activity</p> <p>(U) \$0                      Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$0                      No activity</p> <p>(U) \$0                      Total</p>									
Project 674885			Page 8 of 10 Pages				Exhibit R-2A (PE 0401115F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2000</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0401115F C-130 AIRLIFT SQUADRONS</b>	PROJECT <b>674885</b>
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(U) **B. Project Change Summary**  
 This program is budget activity 7, Operational System Development, for continuing producibility and performance improvements to support full-rate production and increase the operational capability of the C-130 fleet through programmed modifications.

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

	<u>FY 1999</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>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) AF RDT&E									
(U) PE 41130F, C-17 RDT&E	0	0	45,298	29,451	11,497	7,824	0	0	94,070
(U) Other APPN									
(U) PE 41130F, C-17 Procurement (BP1100)	0	0	0	33,100	51,200	48,600	6,200	7,000	146,100
(U) PE 41115F, C-130 Procurement (BP1100)	0	0	0	0	33,400	48,900	6,000	7,000	95,300

(U) **D. Acquisition Strategy**  
 The C-130 LAIRCM acquisition strategy is yet to be determined. It is anticipated that it will be a competitive bid process

(U) **E. Schedule Profile**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Phase I EMD: 2 Qtr FY02												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401115F C-130 AIRLIFT SQUADRONS			PROJECT 674885		
(U)	<b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>									
					<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U)	Total									
(U)	<b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>									
(U)	<b><u>Performing Organizations:</u></b>									
	<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>Budget to</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
	<u>Product Development Organizations</u>									
	<u>Support and Management Organizations</u>									
	<u>Test and Evaluation Organizations</u>									
(U)	<b><u>Government Furnished Property:</u></b>									
		<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>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
	<u>Product Development Property</u>									
	<u>Support and Management Property</u>									
	<u>Test and Evaluation Property</u>									
	<u>Subtotals</u>					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
						<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
	<u>Subtotal Product Development</u>									
	<u>Subtotal Support and Management</u>									
	<u>Subtotal Test and Evaluation</u>									
	<u>Total Project</u>									