

**UNCLASSIFIED**

PE NUMBER: 0401134F

PE TITLE: Large Aircraft InfraRed Counter Measures (LAIRCM)

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>May 2009</b>
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<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	17.557	36.401	31.784	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4942 Large Aircraft Infrared Counter Measures (LAIRCM)	17.557	36.401	31.784	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

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

The Large Aircraft Infrared Countermeasures System (LAIRCM) is an evolutionary acquisition program that provides significantly improved defensive systems capability for DoD aircraft to counter the infrared (IR) Man-Portable Air-Defense Systems (MANPADS) missile threat.

The current LAIRCM system configuration [AN/AAQ-24V] consists of an ultra-violet missile-warning sensor (MWS), a laser transmitter assembly, control interface unit and processors to detect, track, jam and counter incoming IR missiles. The number of sensors and turrets per aircraft is determined by the size and signature of the aircraft. This system is fully automatic following system power-up. LAIRCM requirements are documented in the multi-command Operational Requirements Document (ORD) - LAIRCM ORD 314-92, validated on 3 Aug 98. The system was first fielded in May 03 on the C-17 aircraft.

The Baseline program development is complete and consists of the small laser transmitter assembly, ultra-violet MWS, processor, and Control Interface Unit (CIU) and a repeater (on some aircraft) to meet the need for advanced IR countermeasures. The Guardian Laser Transmitter Assembly (GLTA) is an upgrade to the baseline transmitter equipment. First production GLTA delivery occurred in June FY08.

Development of the Next Generation Missile Warning System (NexGen MWS) is new hardware that improves capability. Baseline equipment (ultra-violet MWS) will be retrofitted with the NexGen MWS as it becomes available. Production contract award occurred Oct 08.

LAIRCM UPGRADES--continuous hardware and software upgrades and testing of the LAIRCM system ensure new and emerging threats are defeated. These include, but are not limited to upgrades to the LAIRCM core processor for Engagement Reporting (ER) and software block updates also include the integration of a software block upgrade program and study of Closed Loop Infrared Countermeasure (CLIRCM) capabilities. The LAIRCM program continually integrates potential upgrades for capability and reliability for all Line Replaceable Units (LRUs) and major Shop Replaceable Units (SRUs) to meet/defeat emerging threats. Additionally, upgrades to or development of new support equipment or support equipment capability is captured in the LAIRCM UPGRADES project(s).

Group A integration and testing as well as integration support to incorporate LAIRCM on new platforms including C-130J, multiple potential C-130H/J variants as defined by AMC and AFSOC, and multiple potential Tanker Aircraft variants as defined by AMC will be accomplished.

LAIRCM ATS Development - Develop the capability of the Versatile Automatic Test System (VDATS) for LAIRCM application. The Integrated Life Cycle Management (ILCM) executive agent for Automatic Test Systems (ATS) is focused on reducing weapon system unique ATS through replacement with a Common Versatile ATS tester that can perform similar test across multiple weapons platforms.

LAIRCM is Budget Activity 7, Operational Systems Development, as it is an electronic countermeasures system upgrade to existing weapons systems.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	19.324	32.100	12.073
(U) Current PBR/President's Budget	17.557	36.401	31.784
(U) Total Adjustments	-1.767	4.301	
(U) Congressional Program Reductions			
Congressional Rescissions	-0.123		
Congressional Increases		4.400	
Reprogrammings	-1.115		
SBIR/STTR Transfer	-0.529	-0.099	

(U) **Significant Program Changes:**

FY10 increases are for investment in continued hardware/software upgrades & testing to increase component and system capabilities, and minor rephasing of a/c integration projects.

## Exhibit R-2a, RDT&amp;E Project Justification

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BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT NUMBER AND TITLE		
<b>07 Operational System Development</b>		<b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>						<b>4942 Large Aircraft Infrared Counter Measures (LAIRCM)</b>		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
4942 Large Aircraft Infrared Counter Measures (LAIRCM)	17.557	36.401	31.784	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

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

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Exhibit R-2a, RDT&E Project Justification

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**May 2009**

BUDGET ACTIVITY <b>07 Operational System Development</b>	PE NUMBER AND TITLE <b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>	PROJECT NUMBER AND TITLE <b>4942 Large Aircraft Infrared Counter Measures (LAIRCM)</b>
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(U) <b><u>B. Accomplishments/Planned Program (\$ in Millions)</u></b>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Group A Integration	6.414	19.396	16.223
(U) Guardian Laser Transmitter Assembly (GLTA) Program	2.374	0.000	0.000
(U) LAIRCM Upgrades	3.427	12.642	10.055
(U) Testing/Test Program Costs	3.713	3.761	5.306
(U) PMA	1.629	0.602	0.200
(U) LAIRCM Automatic Test System (ATS) Development			
(U) Total Cost	17.557	36.401	31.784

(U) <b><u>C. Other Program Funding Summary (\$ in Millions)</u></b>	<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>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) C-130 (AFRC) Procurement (BP1100)	17.431	59.507	1.055							
(U) C-17 Procurement (BP1100)	141.410	106.750	134.093							
(U) C-130 Procurement (BP1100)	26.077	3.047								
(U) C-5 Procurement (BP1100)	18.622	41.671	24.532							
(U) C-130J Procurement (BP1100)		9.000	4.163							

(U) **D. Acquisition Strategy**

The LAIRCM SDD contract was awarded on 28 Sep 01 as a CPAF contract. An IDIQ contract for LAIRCM production hardware and support was awarded in May 06. Hardware and software upgrades will be awarded as separate delivery orders under the IDIQ and other contracts.

The Next Generation Missile Warning System (NextGen MWS) contracts for a Systems Design and Development (SDD) competition were awarded to Northrop Grumman and Lockheed Martin in Jun 04. Both contractors developed, tested and integrated NextGen MWS prototypes during the SDD competition and a source selection (SS) for production was completed. A Milestone C decision was made in May 08. Contract award occurred Oct 08. Integration of the NextGen MWS production hardware will be accomplished with the NextGen MWS production contractor and the platform Group A integrator for the various LAIRCM equipped platforms.

Integration of the LAIRCM subsystems on C-130 variants is accomplished by Northrop Grumman. The contract for AC-130H integration was awarded in FY07. The

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contract for EC-130J integration will be awarded in FY09/10. Contracts were awarded to Lockheed Martin and Northrop Grumman for a C-130J LAIRCM integration study in FY07. Contracts for the design, integration and test of LAIRCM on the C-130J will be awarded to Lockheed Martin and Northrop Grumman in FY09.

LAIRCM Upgrades includes hardware and software upgrades and testing of the LAIRCM system to ensure new and emerging threats will be defeated. These include, but are not limited to, upgrades to the LAIRCM core processor for Engagement Reporting (ER) and software block updates. It also includes the integration of a software block upgrade program and study of Closed Loop Infrared Countermeasure (CLIRCM) capabilities. The LAIRCM program continually integrates potential upgrades for capability and reliability for all Line Replaceable Units (LRUs) and major Shop Replaceable Units (SRUs) to meet/defeat emerging threats. Additionally, upgrades to or development of new support equipment or support equipment capability is captured in the LAIRCM UPGRADES project(s). The Northrop Grumman contract is cost plus fixed fee and is a continuing effort.

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**Exhibit R-3, RDT&E Project Cost Analysis**

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<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>	<b>PROJECT NUMBER AND TITLE</b> <b>4942 Large Aircraft Infrared Counter Measures (LAIRCM)</b>
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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> SDD Phase I	Various	Various	111.158								111.158	
EC-130J Integration	CPFF	Northrop Grumman, Rolling Meadows, IL				0.958	Oct-09	4.393			5.351	
AC-130H Integration	CPFF	Northrop Grumman, Rolling Meadows, IL	9.223								9.223	
AC-130U Integration	CPFF	Northrop Grumman, Rolling Meadows, IL				4.267	Jan-10				4.267	
Next Generation Missile Warning Sensor Integration	CPAF/FFP	Northrop Grumman, Rolling Meadows, IL	17.083								17.083	
Next Generation Missile Warning Sensor Development	CPFF	Northrop Grumman, Rolling Meadows, IL	34.006								34.006	
Next Generation Missile Warning Sensor Development	CPFF	Lockheed Martin, Orlando, FL	11.146								11.146	
GLTA Development	CPFF	Northrop Grumman, Rolling Meadows, IL	41.684	2.374							44.058	
C-5B Development & Integration	CPFF	Lockheed Martin, Marietta, GA	26.277	0.774							27.051	
C-130J Development & Integration	CPAF	Lockheed Martin, Marietta, GA	0.644	5.640		14.171	May-09	11.830			32.285	
LAIRCM Hardware and Software upgrades	CPFF	Northrop Grumman, Rolling Meadows, IL	0.621	3.427		12.642		10.055			26.745	

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Exhibit R-3, RDT&E Project Cost Analysis							DATE <b>May 2009</b>		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT NUMBER AND TITLE		
<b>07 Operational System Development</b>				<b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>			<b>4942 Large Aircraft Infrared Counter Measures (LAIRCM)</b>		
Subtotal Product Development			251.842	12.215	32.038	26.278	0.000	322.373	0.000
Remarks:	FY09 funding for MC-130H is Congressional Add Funding - contract award date TBD.								
(U) <u>Support</u>									
654 AESS	Various	Various	21.125	1.629	0.602	0.200		23.556	
Subtotal Support			21.125	1.629	0.602	0.200	0.000	23.556	0.000
Remarks:									
(U) <u>Test &amp; Evaluation</u>									
Various Gov't Test Organizations	Various	Various	7.865	3.713	3.761	5.306		20.645	
Subtotal Test & Evaluation			7.865	3.713	3.761	5.306	0.000	20.645	0.000
Remarks:									
(U) <u>Total System Cost</u>									
(U) Total Cost			280.832	17.557	36.401	31.784	0.000	366.574	0.000
Remarks:									

Exhibit R-4, RDT&E Schedule Profile

DATE

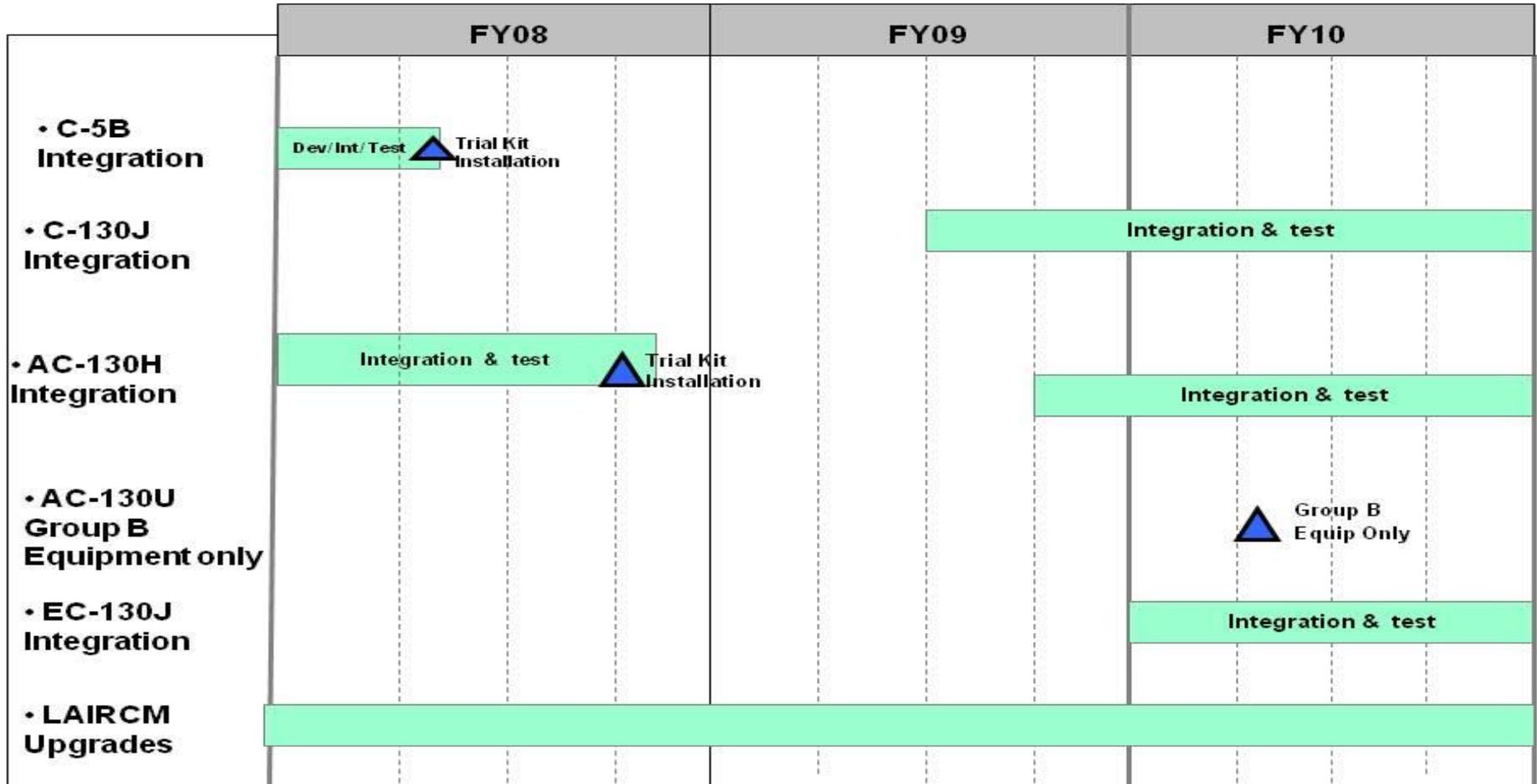
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# LAIRCM



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<b>Exhibit R-4a, RDT&amp;E Schedule Detail</b>	DATE <b>May 2009</b>
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<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>	<b>PROJECT NUMBER AND TITLE</b> <b>4942 Large Aircraft Infrared Counter Measures (LAIRCM)</b>
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	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) <b><u>Schedule Profile</u></b>			
(U) C-5B Integration	1-2Q		
(U) C-130J Integration		3-4Q	1-4Q
(U) AC-130H Integration	1-4Q		
(U) EC-130J Integration			1-4Q

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