

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1998
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BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603319F Airborne Laser Program	PROJECT 4269
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<i>COST (\$ In Thousands)</i>	FY 1997 Actual	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
4269 Airborne Laser	56,037	151,439	292,219	314,242	150,739	175,954	152,580	0*	1,336,718*
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

* The FY98 President's Budget (PB) R-2 submission included the cost of both Airborne Laser (ABL) Program Definition and Risk Reduction (PDRR) and Engineering and Manufacturing Development (EMD) in this PE 0603319F line. Since then, the AF has created PE 0604350F (BPAC 654687) for ABL EMD costs, moved the FY 2003 EMD costs to the new PE, and realigned EMD funding beyond the FYDP to PE 0604350F. The Total Cost now reflects cost for Concept Design and PDRR only and contains \$43,508 in funds prior to FY 1997.

**This Qty is for the acquisition of commercial 747-400F freighter aircraft. These aircraft are incrementally funded beginning in the years identified.

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

The Airborne Laser (ABL) Program is an ACAT 1D program which will design, build and test a laser weapon system to acquire, track and kill Theater Ballistic Missiles (TBMs) in the boost phase. This weapon system integrates three major subsystems (Laser, Beam Control and Battle Management Command, Control, Communications, Computers and Intelligence (BMC4I)) into a modified commercial Boeing 747-400F aircraft. The program awarded the ABL PDRR contract to the Boeing/TRW/Lockheed-Martin team in November 1996, to design, fabricate, integrate, and test the half-power ABL system. The PDRR phase culminates with a lethality (missile shoot-down) demonstration against a boosting TBM representative target in FY 2002. The PDRR phase will integrate and test all key technologies needed for a fully operational system, allowing the Air Force to advance into EMD in FY 2003. This program is in budget activity 4 - Demonstration and Validation since it is a major defense acquisition program which has been authorized to enter PDRR as of the Milestone I, November 1996.

(U) Acquisition Strategy:

Milestone (MS) I decision was November 1996 authorizing entry into PDRR; MS II for EMD in FY 2003; MS III Decision for Production in FY 2005. The PDRR program is structured to demonstrate technical risk reduction achievements at key junctures throughout the PDRR phase. The Air Force Service Acquisition Executive will review the program at two key points (Authority-to-Proceed I & II) during PDRR to ensure planned progress is attained. PDRR culminates with a lethality (missile shoot-down) demonstration against a boosting theater ballistic missile in FY 2002.

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BUDGET ACTIVITY		February 1998
4 - Demonstration and Validation	PE NUMBER AND TITLE	PROJECT
	0603319F Airborne Laser Program	4269
(U) FY 1997 (\$ in Thousands):		
– (U) \$ 9,731	Completed both Concept Design contracts	
– (U) \$31,898	Initiated Boeing/TRW/Lockheed-Martin PDRR contract effort for design, fabrication, integration, and test the ABL weapon system	
– (U) \$ 255	Completed Environmental Impact Analysis contract	
– (U) \$ 4,829	Support for special studies, simulations and analyses, technical support, risk management, and an independent review team specializing in lasers, aircraft, and aircraft integration	
– (U) \$ 9,324	Support for atmospheric characterization tests, labor, training, Integrated Product Team (IPT) participation, and other government agencies	
– (U) \$56,037	Total	
(U) FY 1998 (\$ in Thousands):		
– (U) \$137,456	Continue Boeing/TRW/Lockheed-Martin PDRR contract effort for design, fabrication, integration, and test the ABL weapon system	
– (U) \$ 700	Minor modification to Birk facility at Edwards AFB, CA by Boeing/TRW/Lockheed-Martin. Project number FSPM981305. Project title: Airborne Laser Complex Upgrade	
– (U) \$ 4,090	Support for special studies, simulations and analyses, technical support, risk management, and an independent review team specializing in lasers, aircraft, and aircraft integration	
– (U) \$ 9,143	Support for atmospheric characterization tests, labor, training, Integrated Product Team (IPT) participation, and other government agencies	
– (U) \$ 50	Government support to contractor modification to Birk facility at Edwards AFB, CA. Project number FSPM981305.	
– (U) \$151,439	Total	
(U) FY 1999 (\$ in Thousands):		
– (U) \$281,733	Continue Boeing/TRW/Lockheed-Martin PDRR contract effort for design, fabrication, integration, and test the ABL weapon system	
– (U) \$ 1,825	Minor modification to Birk facility at Edwards AFB, CA by Boeing/TRW/Lockheed-Martin. Project number FSPM981305. Project title: Airborne Laser Complex Upgrade	
– (U) \$ 3,970	Support for special studies, simulations and analyses, technical support, risk management, and an independent review team specializing in lasers, aircraft, and aircraft integration	
– (U) \$ 4,516	Support for labor, training, Integrated Product Team (IPT) participation, and other government agencies	
– (U) \$ 175	Government support to contractor modification to Birk facility at Edwards AFB, CA. Project number FSPM981305.	
– (U) \$292,219	Total	
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(U) B. Program Change Summary (\$ in Thousands)

	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Total Cost</u>
(U) Previous President's Budget FY 1998 PB	54,227	157,136	296,596	2,524,994
(U) Appropriated Value	56,828	157,136		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-1,210	-5,697		
b. SBIR	-1,391			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming	1,900			
e. Recissions	-90			
(U) Adjustments to Budget Years Since FY 1998 PB			-4,377	
(U) Current Budget Submit/FY 1999 PB	56,037	151,439	292,219	1,336,718

(U) Change Summary Explanation:

Funding: Added \$1,900 in FY 1997 to support atmospheric characterization data collection efforts and adjunct mission studies. FY 1999 funding reduced by \$4,377 due to downward revision in inflation estimates and other DoD adjustments. Beginning in FY 2003, \$1,118,300 has been realigned to the EMD PE 0604350F.

Schedule: Funding reductions in FY 1998 slip the completion of initial adjunct mission studies 1 year.

Technical: FY 1998 adjustments caused curtailment of participation in Roving Sands 98 and Tactical Weather Decision Aids effort. FY 1999 - FY 2003 funding reductions cause cancellation of all target lethality, enemy countermeasures efforts, and atmospheric data collection and analysis, thereby increasing overall ABL program risk.

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BUDGET ACTIVITY

4 - Demonstration and Validation

PE NUMBER AND TITLE

0603319F Airborne Laser Program

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

(U) RELATED ACTIVITIES:

	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PE 0604350F Airborne Laser EMD	0	0	0	0	0	0	242,843	866,300	1,109,143
(U) PE 0603605F Advance Weapons Technology Project 3647 - High Energy Laser Technologies*									Continuing

* This effort is developing technologies for potential performance enhancements above current requirements identified in the ABL Operational Requirements Document (ORD) .

(U) D. Schedule Profile

	<u>FY 1997</u>	<u>FY 1998</u>	<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) Award PDRR Contract	1	2	3	4	1	2	3	4	1
(U) Completed Concept Design	X								
(U) Program Requirements Review		X							
(U) Order PDRR "Green" Aircraft					X				
(U) Flight-weighted Laser Module Demo						X			
(U) Preliminary Design Review						X			
(U) Authority to Proceed (ATP) - 1						X			
(U) Laser Module Airworthiness Demo							X		
(U) Laser Module Scaling Demo								X	
(U) Critical Design Review									X
(U) Lethality Demonstration (FY 2002)									
(U) Milestone II (FY 2003)									
(U) Milestone III (FY 2005)									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1998			
BUDGET ACTIVITY 4 - Demonstration and Validation				PE NUMBER AND TITLE 0603319F Airborne Laser Program				PROJECT 4269		
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>										
				<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>				
(U) Major Contracts (PDRR contract and Concept Design)				41,629	138,156	283,558				
(U) Support Contracts (Technical Support, Analysis)				5,084	4,090	3,970				
(U) Test/Other Government/Misc Support/Salaries/IPTs				9,324	9,193	4,691				
(U) Total				56,037	151,439	292,219				
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
Performing Organizations:										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1997	Budget FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
<u>Product Development Organizations</u>										
Boeing Defense & Space Group Seattle, WA *	CPAF	12 Nov 96	1,153,605	1,214,478	0	31,898	138,156	283,558	760,866	1,214,478
Concept Design Contract (Rockwell International, CA)	CPFF	9 May 94	21,395	21,395	16,780	4,615	0	0	0	21,395
Concept Design Contract (Boeing Defense & Space Group, WA)	CPFF	9 May 94	21,689	21,689	16,573	5,116	0	0	0	21,689
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BUDGET ACTIVITY 4 - Demonstration and Validation					PE NUMBER AND TITLE 0603319F Airborne Laser Program				PROJECT 4269	
<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 1997</u>	<u>Budget FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Support and Management Organizations</u>										
Technical Support Contracts	Various	Varies	N/A	N/A	5,800	5,084	4,090	3,970	4,340	23,284
Government In-House and Other External Support	Various	Varies	N/A	N/A	4,355	9,180	8,593	1,491	5,753	29,372
<u>Test and Evaluation Organizations</u>										
Air Force Flight Test Center (AFFTC) **	MIPR	Varies	N/A	N/A	0	144	600	3,200	22,556	26,500
Government Furnished Property: None										
NOTES:										
* Project Office EAC was approved at the time of contract award and has been updated to reflect contract changes to date. Project Office EAC includes funds budgeted for risk mitigation identified during Source Selection. Since the FY 1998 PB, the Performing Activity's EAC has been adjusted upward to account for two risk mitigation efforts -- additional Software Lines of Code (SLOC) and Advanced Adaptive Optics (AAO).										
** AFFTC is the single face to the customer for Test and Evaluation. AFFTC receives funding from the Program Office and controls the distribution of these funds within AFFTC, the White Sands Missile Range (WSMR) and the Western Test Range (WTR).										

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(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)

<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 1997</u>	<u>Budget FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Subtotal Product Development				33,353	41,629	138,156	283,558	760,866	1,257,562
Subtotal Support and Management				10,155	14,264	12,683	5,461	10,093	52,656
Subtotal Test and Evaluation				0	144	600	3,200	22,556	26,500
Total Project				43,508	56,037	151,439	292,219	793,515	1,336,718

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