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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2000			
BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>				PE NUMBER AND TITLE <b>0604853F Evolved Expendable Launch Vehicle - EMD</b>				PROJECT <b>650004</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
650004	Evolved Expendable Launch Vehicle	241,973	317,964	332,952	244,021	12,392	0	0	0	1,172,554
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b>                      The Evolved Expendable Launch Vehicle (EELV) program is a space launch system development program. The mission of the EELV program is to partner with industry to develop a national launch capability that satisfies the government's National Launch Forecast (NLF) requirements and reduces the cost of space launch by at least 25%. The EELV system includes launch vehicles, a standard payload interface, support systems, mission integration (includes mission unique requirements), special studies (mission feasibility analysis, secondary payloads, dual manifesting, special flight instrumentation, loads analysis, etc.), post-flight data analysis, and launch operations activities. EELV provides two families of launch vehicles that will launch the government portion of the NLF currently serviced by Titan II, Delta II, Atlas II, and Titan IV. Evolved from current expendable launch systems or components thereof, EELV will support military, intelligence, and civil mission requirements.</p>										
<p>(U) <b><u>FY 1999 (\$ in Thousands)</u></b></p>										
(U)	\$223,673	Continued system development/analysis								
(U)	\$10,190	Systems Engineering								
(U)	\$8,110	Program management and other support costs								
(U)	\$241,973	Total								
<p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p>										
(U)	\$293,909	Continue system development/analysis								
(U)	\$12,582	Systems Engineering								
(U)	\$11,473	Program management and other support costs								
(U)	\$317,964	Total								
<p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p>										
(U)	\$306,891	Continue system development/analysis								
(U)	\$13,211	Systems Engineering								
(U)	\$12,850	Program management and other support costs								
(U)	\$332,952	Total								
Project 650004		Page 1 of 5 Pages					Exhibit R-2 (PE 0604853F)			

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BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>				PE NUMBER AND TITLE <b>0604853F Evolved Expendable Launch Vehicle - EMD</b>			PROJECT <b>650004</b>		
(U) <b><u>B. Budget Activity Justification</u></b>									
This program element is in Budget Activity 5, Engineering and Manufacturing Development, because it supports engineering and manufacturing development of the EELV concept leading to deployment of a lower cost expendable launch vehicle system.									
(U) <b><u>C. Program Change 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>Total Cost</u>
(U)	Previous President's Budget (FY 2000 PBR)	259,143	324,803	307,502					1,168,742
(U)	Appropriated Value	260,297	322,803						
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions	-2,507	-169						
	b. Small Business Innovative Research	-7,699							
	c. Omnibus or Other Above Threshold Reprogram	0	-2,155						
	d. Below Threshold Reprogram	-6,765							
	e. Rescissions	-1,353	-2,515						
	f. Other								
(U)	Adjustments to Budget Years Since FY 2000 PBR	0		25,450					
(U)	Current Budget Submit/FY 2001 PBR	241,973	317,964	332,952					1,172,554
(U) <b><u>Significant Program Changes:</u></b>									
The EELV development effort involves a Firm Fixed Price Other Transaction Agreement (OTA) with The Boeing Company (TBC) and Lockheed Martin Astronautics (LMA). The FY01 program was increased to restore previous inflation adjustments and a \$20M FY99 PB Congressional reduction. The \$20M Congressional decrease resulted in FY99 effort being delayed until FY01. With the restoration of these funds, the program is able to complete EELV development on schedule without increasing the total planned value of this effort FY99 below threshold reprogramming funded other AF priorities.									
(U) <b><u>D. 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>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)	AF RDT&E								176,634
(U)	Other APPN								
(U)	NRO (Non-AF budget)*								95,100
(U)	Missile Procurement, AF PE0305953F) (BA05,P-28)		68,127	287,996	153,111	544,144	515,127	434,024	8,578,400
									10,580,929

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2000</b>
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BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>	PE NUMBER AND TITLE <b>0604853F Evolved Expendable Launch Vehicle - EMD 650004</b>
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		<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) <b>D. Other Program Funding Summary (\$ in Thousands)</b>										
(U) DARPA (Non-AF Budget) (PE 0603226E)**										9,845
* Total includes funding in FY96 and FY97.										
** Total includes funding in FY94.										

(U) **E. Acquisition Strategy**  
 The EELV concept of a family of launch vehicles emphasizes commonality of hardware and infrastructure and economies of scale to enhance production, operations, and support efficiencies. Cost improvements will be achieved through commonality; leveraging the commercial market place; reduction of supporting infrastructure (launch pads, manufacturing facilities, workforce); and optimization of production and launch operations, processes, and rates. EELV is an ongoing competitive program that initially used a rolling downselect acquisition strategy. Four initial contracts were awarded for the Low Cost Concept Validation (LCCV) phase in August 1995. The Air Force downselected to two contractors - Lockheed Martin and Boeing (originally McDonnell Douglas) - for the Pre-Engineering and Manufacturing Development (Pre-EMD) phase in December 1996. On 16 Oct 1998, two \$500M Other Transaction Agreements (OTA) were awarded to The Boeing Company and Lockheed Martin Astronautics for the development effort. The contractors will contribute additional funds of their own, as necessary, to bring their national launch operational capability on line. It is estimated that each contractor is investing approximately \$1B. During the development effort, each contractor's progress will be measured by the use of discrete contractual Milestone Payments associated with major development accomplishments. When a contractor completes a milestone on time, and the government agrees the milestone accomplishment criteria have been successfully met, the government is obligated to pay in the fiscal year in which the funds were budgeted. Simultaneous with the award of the development effort, an Initial Launch Services (ILS) contract was awarded to Boeing for \$1.38B (19 missions) and an ILS contract was awarded to Lockheed Martin for \$649M (9 missions). The Development/ILS approach maintains competition throughout the life of the program, leverages the growing commercial launch market, caps the government's development costs, and allows partnership with industry, while still reducing the program's overall cost to launch the NLF by at least 25% over existing systems. The EELV system will launch the government portion of the NLF through 2020.

		<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) Defense Acquisition Board - Milestone II		*											
(U) Development OTAs awarded		*											
(U) Tailored Critical Design Review completed						*							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2000			
BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>					PE NUMBER AND TITLE <b>0604853F Evolved Expendable Launch Vehicle - EMD</b>				PROJECT <b>650004</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U)	System development					223,673	293,909	306,891			
(U)	Systems Engineering					10,191	12,582	13,211			
(U)	Program management and other support costs					8,109	11,473	12,850			
(U)	Total					241,973	317,964	332,952			
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</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 Boeing	OTA	Oct 98	500,000	500,000	10,200	111,943	146,954	155,546	109,130	533,773
	Prime Contractor Lockheed Martin	OTA	Oct 98	500,000	500,000	10,200	111,730	146,955	151,345	113,330	533,560
<u>Support and Management Organizations</u>											
	SPO Mission Spt	Various	Various	N/A	N/A	231	6,613	9,223	10,375	14,943	41,385
	FFRDC	SS/CPAF	Annual	N/A	N/A	2,621	10,191	12,582	13,211	15,162	53,767
	Other Cntr Spt	Various	Various	N/A	N/A	0	1,496	2,250	2,475	3,848	10,069
<u>Test and Evaluation Organizations</u>											
	None										
<b>(U) Government Furnished Property:</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>										
	None										

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**RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)**

DATE  
**February 2000**

BUDGET ACTIVITY  
**05 - Engineering and Manufacturing Development**

PE NUMBER AND TITLE PROJECT  
**0604853F Evolved Expendable Launch Vehicle - EMD 650004**

(U) **Government Furnished Property Continued:**

Support and Management Property

None

Test and Evaluation Property

None

	<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	20,400	223,673	293,909	306,891	222,460	1,067,333
Subtotal Support and Management	2,852	18,300	24,055	26,061	33,953	105,221
Subtotal Test and Evaluation						
Total Project	23,252	241,973	317,964	332,952	256,413	1,172,554