

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

February 2002

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203802A - Other Missile Product Improvement Programs

COST (In Thousands)	FY 2001 Actual	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	54419	68318	13018	9988	0	19810	9975	0	190260
336 TOW PIP	42710	50174	0	0	0	0	0	0	107300
785 LONGBOW HELLFIRE PIP	11709	18144	13018	9988	0	0	0	0	52859
786 APKWS SIMULATOR UPGRADE	0	0	0	0	0	19810	9875	0	30000
797 ATACMS 2020	0	0	0	0	0	0	100	0	101

A. Mission Description and Budget Item Justification: The TOW Fire and Forget (F&F) Missile program provides a capability to Light Early-Entry Contingency Forces and the Interim Brigade Combat Teams equipped with the TOW Improved Target Acquisition System (ITAS). The Army has recently completed a thorough review of all programs in order to balance near-term requirements with Objective Force needs. As a result, the TOW F&F program is not funded beginning in FY 03.

Longbow HELLFIRE is a critical system to the Interim and Objective Forces. Longbow HELLFIRE provides the Army with a fire-and-forget, anti-armor capability for the Apache Longbow (Interim Force) and Comanche (Objective Force) helicopters. The fire-and-forget Longbow HELLFIRE system greatly increases aircraft survivability and dramatically improves target acquisition and engagement capabilities in adverse weather when the battlefield is obscured (smoke, fog, dust), and when the threat is using countermeasures. Evolutionary improvements are required to maintain the current effectiveness of the Longbow HELLFIRE missile against expanding regional power threats. The Longbow HELLFIRE Product Improvement Program (PIP) will improve Home-on-Jam (HOJ)/Anti-Jam (AJ) and add Counter-Active Protection System (CAPS) capabilities for the missile. The HOJ/AJ and CAPS objective is to maintain the Longbow HELLFIRE Missile System's low vulnerability, and susceptibility to any "hard kill" Active Protection System (APS) and battlefield jammer threats. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

The Advanced Precision Kill Weapon System (APKWS) Training Simulator upgrades will consist of the development, testing, and installation of the software/hardware necessary for pilot training. These software upgrades will be developed, tested, and installed on the AH-64 Apache, and the RAH-66 Comanche helicopter simulators. These training simulator upgrades will aid the pilot in the initial and annual training required for firing the APKWS munition. The training simulator upgrades will significantly reduce the number of munitions required for initial and annual training. The system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	55900	84935	58460
Appropriated Value	56418	68935	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-617	0
b. SBIR / STTR	-1662	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	181	0	0
e. Rescissions	-518	0	0
f. Other Withholds	0	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-45442
Current Budget Submit (FY 2003 PB)	54419	68318	13018

FY02 Congressional reduction of \$16 million.
 FY03 reductions due to higher Army priorities.

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BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs					PROJECT 785			
COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
785	Longbow Hellfire PIP	11709	18144	13018	9988	0	0	0	0	52859

A. Mission Description and Budget Item Justification: Longbow HELLFIRE is an objective force missile system that provides the Army with a fire -and-forget, anti-armor capability for the Apache Longbow (Interim Force) and Comanche (Objective Force) helicopters. The fire -and-forget Longbow HELLFIRE system greatly increases aircraft survivability and dramatically improves target acquisition and engagement capabilities in adverse weather when the battlefield is obscured (smoke, fog, dust), and when the threat is using countermeasures. Evolutionary improvements are required to maintain the current effectiveness of the Longbow HELLFIRE missile against expanding regional power threats. The Longbow HELLFIRE Product Improvement Program (PIP) will improve Home -on-Jam (HOJ)/Anti-Jam (AJ) and add Counter-Active Protection System (CAPS) capabilities for the missile. The HOJ/AJ and CAPS objective is to maintain the Longbow HELLFIRE Missile System's low vulnerability, and susceptibility to any "hard kill" Active Protection System (APS) and battlefield jammer threats. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 10122 Developed system requirements and preliminary design for HOJ/AJ software and CAPS hardware.
- 525 Completed update and reconfiguration of the Telemetry Mobile Ground Station (TMGS).
- 1062 Performed government engineering support.

Total 11709

FY 2002 Planned Program

- 15062 Complete critical/final design of HOJ/AJ software; complete 6 degree of freedom modeling.
- 1814 Conduct tower, wind tunnel, and hardware in the loop testing.
- 1268 Perform government engineering support.

Total 18144

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PROJECT

785

FY 2003 Planned Program

- 10373 Implement design changes; formal hardware qualification; hardware in the loop; complete critical/final design; complete guidance section and rocket ball design evaluation.
- 1336 Conduct missile ground flight test, low speed captive flight test, and aircraft system flight test.
- 1309 Perform government engineering support.

Total 13018

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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
C70300 Longbow Hellfire/LBHF	282745	233278	184396	38718	37154	47527	18449	0	1135118

C. Acquisition Strategy: Development of the Longbow Hellfire HOJ/AJ and CAPS will be sole source to the prime contractor, Longbow Limited Liability Company (LLC). The U.S. Army Aviation and Missile Command (AMCOM) labs will provide assistance/technical expertise during the development effort. A sole source contract was awarded to the LLC for development and qualification of HOJ/AJ and CAPS.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Concept formulation/acquisition strategy LBHF PIP	1Q						
LLC contract award LBHF PIP	2Q						
Requirements definition LBHF PIP	3Q						
Test and Evaluation		2-3Q					
Missile firings LBHF HOJ/AJ			2Q				
Engineering Change Proposal LBHF HOJ/AJ			3Q				
Complete detailed design LBHF CAPS			2Q				
Test and Evaluation				2Q			
Engineering Change Proposal LBHF CAPS				3Q			

ARMY RDT&E COST ANALYSIS(R-3)

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PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prime Contract	LC/CPIF-AF	Longbow Limited Liability Company, Orlando, FL	0	8479	2Q	12722	1Q	8970	1Q	4829	35000	0
b . Support Contracts	Various	Various	0	1103		1006		623		764	3496	0
c . Development Engineering	Various	Various	0	540		1334		780		1000	3654	0
Subtotal:			0	10122		15062		10373		6593	42150	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Support	Various	Various	0	525		1814		1336		2288	5963	0
Subtotal:			0	525		1814		1336		2288	5963	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	Various	Various	0	1062		1268		1309		1107	4746	0
Subtotal:			0	1062		1268		1309		1107	4746	0

Project Total Cost:			0	11709		18144		13018		9988	52859	0
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