

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

June 2001

BUDGET ACTIVITY

7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE

0203802A - Other Missile Product Improvement Programs

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	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	13215	55900	84935	0	0	0	0	0	0	0
336 TOW PIP	13215	43736	66633	0	0	0	0	0	0	0
785 LONGBOW HELLFIRE PIP	0	12164	18302	0	0	0	0	0	0	0
797 ATACMS 2020	0	0	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

The TOW Fire and Forget (F&F) Missile program provides a critical capability to Light Early-Entry Contingency Forces and the Interim Brigade Combat Teams equipped with the TOW Improved Target Acquisition System (ITAS). The TOW F&F supports maximum engagement throughout varying battlefield conditions against a vast array of target types. The TOW F&F provides enhanced range for maximum standoff and improved lethality against new and evolving threat armor systems including those equipped with active protection systems. The TOW F&F may be fired in either of two modes of attack. The primary mode is F&F and the alternate mode uses wireless command to line of sight (CLOS) guidance. The F&F mode eliminates the requirement for the warfighter to be exposed and vulnerable while continuously maintaining track on the target while the missile is in flight. With the F&F mode, the warfighter is able to launch the missile at the target and then immediately move to safety or a new firing position before the enemy is able to return fire. As a result, the F&F mode significantly enhances the warfighter's survivability. The CLOS mode provides the warfighter with the capability to engage targets when conditions preclude F&F engagements and to engage fortifications and buildings. The TOW F&F will have a modular design to facilitate cost effective technology insertion, shelf life extension, and demilitarization. TOW F&F is a technology carrier for the Joint Common Missile Program and supports the Legacy transition path of the Army's Transformation Campaign Plan.

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 Commanche (Objective Force) helicopters. The fire-and-forget Longbow HELLFIRE system greatly increases aircrew 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).

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<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	17687	64418	84555	0
Appropriated Value	17914	56418	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-476	0	0	
c. Omnibus or Other Above Threshold Reductions	-73	0	0	
d. Below Threshold Reprogramming	-3996	0	0	
e. Rescissions	-154	-518	0	
f. Other Withholds	0	0	0	
Adjustments to Budget Years Since FY2001 PB	0	0	380	
Current Budget Submit (FY 2002/2003 PB)	13215	55900	84935	0

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BUDGET ACTIVITY 7 - OPERATIONAL SYSTEMS DEV				PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs				PROJECT 336		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
336 TOW PIP	13215	43736	66633	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project D336 -The TOW Fire and Forget (F&F) Missile program provides a critical capability to Light Early-Entry Contingency Forces and the Interim Brigade Combat Teams equipped with the TOW Improved Target Acquisition System (ITAS). The TOW F&F supports maximum engagement throughout varying battlefield conditions against a vast array of target types. The TOW F&F provides enhanced range for maximum standoff and improved lethality against new and evolving threat armor systems including those equipped with active protection systems. The TOW F&F may be fired in either of two modes of attack. The primary mode is F&F and the alternate mode uses wireless command to line of sight (CLOS) guidance. The F&F mode eliminates the requirement for the warfighter to be exposed and vulnerable while continuously maintaining track on the target while the missile is in flight. With the F&F mode, the warfighter is able to launch the missile at the target and then immediately move to safety or a new firing position before the enemy is able to return fire. As a result, the F&F mode significantly enhances the warfighter's survivability. The CLOS mode provides the warfighter with the capability to engage targets when conditions preclude F&F engagements and to engage fortifications and buildings. The TOW F&F will have a modular design to facilitate cost effective technology insertion, shelf life extension, and demilitarization. TOW F&F is a technology carrier for the Joint Common Missile Program and supports the Legacy transition path of the Army's Transformation Campaign Plan.

FY 2000 Accomplishments

- 1698 Released EMD Request for Proposal; Conducted Source Selection; Completed Milestone II; and Awarded EMD Contract.
- 11517 Initiated Component Design, Simulation, and System Engineering Analysis for Preliminary Design Review (PDR).

Total 13215

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BUDGET ACTIVITY

7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE

0203802A - Other Missile Product Improvement Programs

PROJECT

336**FY 2001 Planned Program**

- 13272 Continue Component Design, Simulation and System Engineering Analysis for Preliminary Design Review.
- 120 Complete PDR.
- 1201 Prepare for Early User Demonstration.
- 24358 Continue Component Design, Simulation and System Engineering Analysis for Critical Design Review.
- 400 Conduct Early User Demonstration.
- 3084 Initiate Pilot Line Development and Preparation.
- 1301 Small Business Innovative Research/Small Business Technology Transfer Programs.

Total 43736

FY 2002 Planned Program

- 1680 Conduct Critical Design Review and Update TOW F&F Simulations.
- 31889 Continue System Engineering Analysis and Design; Pilot Line Development and Preparation; Procure Sub-vendor Prototype Hardware and Test Equipment.
- 28445 Initiate Procurement of Hardware for Pre-Production Test (PPT); Initiate testing; Prepare and update missile design documentation.
- 4619 Continue Pilot Line Development and Preparation.

Total 66633

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BUDGET ACTIVITY 7 - OPERATIONAL SYSTEMS DEV	PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs	PROJECT 336
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B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
C61700 ITAS/TOW Mods	71764	63969	96204	0	0	0	0	0	0	0

C. Acquisition Strategy: The TOW F&F missile program utilizes the latest seeker and guidance technology, providing a high performance and reliable fire and forget missile. A competitive EMD contract was awarded 4th quarter FY00. The TOW F&F program includes a 42 month EMD phase, followed by Low Rate Initial Production (LRIP) and Full Rate Production (FRP).

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Release TOW F&F RFP	1Q			0	0	0	0	0
Award TOW F&F EMD contract	3Q			0	0	0	0	0
Conduct TOW F&F PDR		3Q		0	0	0	0	0
Conduct TOW F&F CDR			2Q	0	0	0	0	0
Conduct TOW F&F PPT			3Q	0	0	0	0	0
Conduct TOW F&F PQT				0	0	0	0	0
Conduct TOW F&F Limited User Test (LUT)				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY 7 - OPERATIONAL SYSTEMS DEV	PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs	PROJECT 336
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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 . PY Sunk Cost			145427	0		0		0	0	0	0	0
b . ITAS EMD	C/CPIF/AF	Raytheon, McKinney, TX	59724	0		0		0	0	0	0	0
c . ITAS Training Development	MIPR	STRICOM, Orlando, FL	9128	0		0		0	0	0	0	0
d . Misc.	Various	Various	5325	0		0		0	0	0	0	0
e . TOW F&F EMD	CPIF	Raytheon, Tucson, AZ	9086	33068	2Q	49480	1Q	0	0	0	0	0
Subtotal:			228690	33068		49480		0		0	0	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
a . PY Sunk Cost			46912	0		0		0	0	0	0	0
b . Program Mgt Support	PO	PM CCAWS, RSA	6091	3033	1-4Q	4707	1-4Q	0	0	0	0	0
c . Functional Gov't Support	PO	MICOM, RSA, AL	15216	3588	1-4Q	4940	1-4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY 7 - OPERATIONAL SYSTEMS DEV	PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs	PROJECT 336
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II. Support Cost (continued)	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
d . Misc.	Various	Various	2683	1080	1-4Q	2159	1-4Q	0	0	0	0	0
Subtotal:			70902	7701		11806		0		0	0	0

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 . PY Sunk Cost			42221	0		0		0	0	0	0	0
b . Program Test Support	MIPR	TECOM, APG, MD	15836	230	1-4Q	299	1-4Q	0	0	0	0	0
c . Program Test Support	MIPR	TEXCOM, Ft. Hood, TX	1557	0		0		0	0	0	0	0
d . Misc.	Various	Various	1827	485	1-4Q	710	1-4Q	0	0	0	0	0
e . Program Test Support	MIPR	TECOM, RTTC	614	2252	1-4Q	4338	1-4Q	0	0	0	0	0
Subtotal:			62055	2967		5347		0		0	0	0

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BUDGET ACTIVITY 7 - OPERATIONAL SYSTEMS DEV	PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs	PROJECT 336
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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
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			361647	43736		66633		0		0	0	0
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BUDGET ACTIVITY 7 - OPERATIONAL SYSTEMS DEV				PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs				PROJECT 785		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	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	0	12164	18302	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: 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 Commanche (Objective Force) helicopters. The fire-and-forget Longbow HELLFIRE system greatly increases aircrew 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 2000 Accomplishments

Project not funded.

FY 2001 Planned Program

- 11436 Product Development
- 367 Management Service Support
- 361 Small Business Innovation Research/Small Business Technology Transfer

Total 12164

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BUDGET ACTIVITY 7 - OPERATIONAL SYSTEMS DEV	PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs	PROJECT 785
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FY 2002 Planned Program

- 15062 Product Development
 - 1356 Test and Evaluation Support
 - 1884 Management Service Support
- Total 18302

<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
C70300 Longbow Hellfire/LBHF	292851	282745	234911	0	0	0	0	0	0	0

C. Acquisition Strategy: Development of the Longbow Hellfire HOJ/AJ and CAPS will be done jointly, the prime contractor being Longbow Limited Liability Company (LLLC). The U.S. Army Aviation and Missile Command (AMCOM) labs will provide assistance/technical expertise during the development effort.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Concept formulation/acquisition strategy LBHF PIP		1Q		0	0	0	0	0
LLLC contract award LBHF PIP		2Q		0	0	0	0	0
Requirements definition LBHF PIP		3Q		0	0	0	0	0
Complete detailed design LBHF HOJ/AJ			1Q	0	0	0	0	0
Integration and testing LBHF HOJ/AJ			2Q	0	0	0	0	0
Missile firings LBHF HOJ/AJ			3Q	0	0	0	0	0
Engineering Change Proposal LBHF HOJ/AJ			4Q	0	0	0	0	0
Complete detailed design LBHF CAPS				0	0	0	0	0
Integration and testing LBHF CAPS				0	0	0	0	0
Missile firings LBHF CAPS				0	0	0	0	0
Engineering Change Proposal LBHF CAPS				0	0	0	0	0

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BUDGET ACTIVITY 7 - OPERATIONAL SYSTEMS DEV	PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs	PROJECT 785
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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	Lockheed Martin, Orlando, FL	0	8479	2Q	12722	2Q	0	0	0	0	0
b . Support Contracts	Various	Various	0	2168	1-4Q	1006	1-4Q	0	0	0	0	0
c . Development Engineering	Various	Various	0	789	1-4Q	1334	1-4Q	0	0	0	0	0
Subtotal:			0	11436		15062		0		0	0	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	0		1356	1-4Q	0	0	0	0	0
Subtotal:			0	0		1356		0		0	0	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	728	1-4Q	1884	1-4Q	0	0	0	0	0
Subtotal:			0	728		1884		0		0	0	0

Project Total Cost:			0	12164		18302		0		0	0	0
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