

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

February 2003

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604854A - Artillery Systems - EMD

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	63655	26614	32629	9636	1401	0	0	0	0	161547
2KT CRUSADER OPERATIONAL TEST	192	0	0	0	0	0	0	0	0	410
503 CRUSADER-ED	40444	0	0	0	0	0	0	0	0	40445
509 LIGHTWEIGHT 155M HOWITZER	18874	21045	32078	8850	980	0	0	0	0	107159
516 PALADIN/FAASV	4145	5569	551	786	421	0	0	0	0	13533

A. Mission Description and Budget Item Justification: This program element supports the Joint Light Weight 155mm Howitzer (LW155) and the Paladin/FAASV Improvement programs.

The LW155, a joint program with the Marine Corps, provides the replacement for the current 1970's vintage M198, 155mm Towed Howitzer. The LW155 provides significant improvement in strategic and tactical mobility over the M198. The Army portion of the joint development is the Towed Artillery Digitization (TAD). TAD is the digital fire control system for the LW155. TAD provides increased accuracy, survivability, and lethality for Army and USMC 155mm Towed Artillery. This system supports both the Legacy and Interim transition paths of the Army Transformation Campaign Plan (TCP).

The Crusader system was terminated in the FY03 A mended President's Budget.

The Paladin/FAASV project integrates several system improvements that provide for: stowage and automated dispensing of M231/M232, Modular Artillery Charge System (MACS), that is displacing the current propelling charges; replacement of M82 cartridge primer with a laser propellant ignition system; and upgrading components of the Automated Fire Control System to avoid obsolescence. These system improvements provide significantly improved mission effectiveness, increased reliability, maintainability and supportability, as well as reduce life cycle costs. This system supports the Legacy transition path of the Army Transformation Campaign Plan (TCP).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2003****BUDGET ACTIVITY****5 - System Development and Demonstration****PE NUMBER AND TITLE****0604854A - Artillery Systems - EMD**

<u>B. Program Change Summary</u>	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003)	61961	251376	466434	424971
Current Budget (FY 2004/2005 PB)	63655	26614	32629	9636
Total Adjustments	1694	-224762	-433805	-415335
Congressional program reductions		-223519		
Congressional rescissions		-347		
Congressional increases				
Reprogrammings	3399	-153		
SBIR/STTR Transfer	-1705	-743		
Adjustments to Budget Years			-433805	-415335

FY02 Below Threshold Reprogramming was executed in April 2002 to support Crusader, D503(\$2.6M) and LW155, D509(\$1.4m).
FY03-05 adjustments reflect termination of the SDD phase of the Crusader Project.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)								February 2003		
BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD					PROJECT 509	
COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
509 LIGHTWEIGHT 155M HOWITZER	18874	21045	32078	8850	980	0	0	0	0	107159
<p><u>A. Mission Description and Budget Item Justification:</u>The Lightweight 155mm (LW155) Towed Howitzer, a jointly managed program with the Marine Corps, will provide the replacement for the M198, 155mm Towed Howitzer. LW155 provides significant strategic and tactical mobility improvements. Project 509 supports Towed Artillery Digitization (TAD) Block I, a digital fire control system for the M777 Towed Howitzer (base model of LW155), making it an M777A1. TAD will increase the accuracy, survivability, and lethality of Army and USMC 155mm Towed Artillery. Close coordination with the Excalibur office will ensure that the M777A1 will be capable of firing the Excalibur precision munition in FY06. This system supports both the Legacy and Interim transition paths of the Transformation Campaign Plan (TCP).</p>										
<u>Accomplishments/Planned Program</u>						<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	
Completed funding of the FY02 increment of the TAD Block I SDD contract. Figure does not include test articles.						9040	0	0	0	
Funded the fabrication of TAD Block I developmental test articles for component and system level technical testing.						3850	0	0	0	
Funded matrix engineering support for IPTs and Reviews, including Preliminary Design Review and Detailed Design Review at the LRU level. Several software design reviews and an Early User Assessment were also conducted.						3979	0	0	0	
Funds future increments of the TAD Block I SDD contract.						0	14200	11400	3200	
Funds future matrix engineering support for IPTs and reviews, including Detailed Design Reviews at the System level. Numerous software reviews will also be conducted.						0	4682	4478	2700	
Funds core program management, business management, facilities, and other administrative and technical support.						2005	1115	1200	1100	
Funds future test planning, technical testing, Software Formal Qualification Testing, Limited User Testing, and Operational Test and Evaluation for the M777E1.						0	1048	15000	1850	
Totals						18874	21045	32078	8850	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)								February 2003		
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD				PROJECT 509	
B. Other Program Funding Summary	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
RDTE, Navy LW155 Towed How 060363M	14494	11633	5970	0	0	0	0	0	0	32097
Procurement, Marine Corps LW155 Towed Howitzer with TAD Prod, BLIN 218500	0	62643	111489	179325	181183	75363	0	0	0	610003
Procurement, WTCV, Army, LW155 with TAD G01700	1091	0	4998	51097	100720	135844	58999	33604	74300	460653
<p>C. Acquisition Strategy: The overall M777E1 Acquisition Strategy/Plan is to execute a CPIF contract, where the prime contractor has Total System Performance Responsibility (TSPR). TSPR includes the development and testing of TAD Block I, as well as integrating the final TAD hardware onto the M777 lightweight howitzer for a final integrated M777E1 system. All Army howitzers will come off the production line with TAD Block I already installed. The Marine Corps will retrofit 94 LRIP LW155 howitzers with TAD. The remainder of the USMC LW155 production run will have TAD Block I already installed.</p>										

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD					PROJECT 509		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TAD SDD Contract (pre-novation to BAE Systems) Does not include Test Articles	CPIF/AF	General Dynamics, Burlington, VT	14136	0		0		0		0	14136	14136
b . M777E1 SDD Contract (post-novation)	CPIF	BAE Systems, United Kingdom	8450	14200	2Q	11400	2Q	3200	2Q	0	37250	37250
c . Matrix Engineering Support	MIPR	ARDEC, Picatinny Arsenal, NJ	12367	4682	2-3Q	4478	2-3Q	2700	2-3Q	0	24227	0
Subtotal:			34953	18882		15878		5900		0	75613	51386
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	Allotment	JPMO LW155, Picatinny Arsenal, NJ	3858	1115	2-4Q	1200	2-4Q	1100	2-4Q	980	8253	0
Subtotal:			3858	1115		1200		1100		980	8253	0

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD					PROJECT 509		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SDD Test Articles	CPIF	BAE Systems, United Kingdom	5395	0		0		0		0	5395	5395
b . Technical / Operational Testing	MIPR	Yuma Proving Grounds, AZ	0	1048	2-4Q	15000	2-4Q	1850	2Q	0	17898	0
Subtotal:			5395	1048		15000		1850		0	23293	5395
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			44206	21045		32078		8850		980	107159	56781

Schedule Profile Detail (R-4a Exhibit)							February 2003	
BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD				PROJECT 509
<u>Schedule Detail</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Novated TAD Contract (General Dynamics) to M777E1 Contract (BAE Systems)	3Q							
Design Verification and Testing		1-4Q	1-3Q					
Operational Test			4Q					
Full Rate Production Decision				1Q				
Initial Operational Capability					4Q			